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Infantry

SCHOOL QUARTERLY

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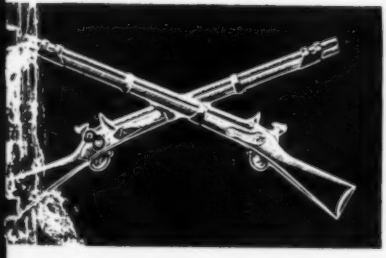
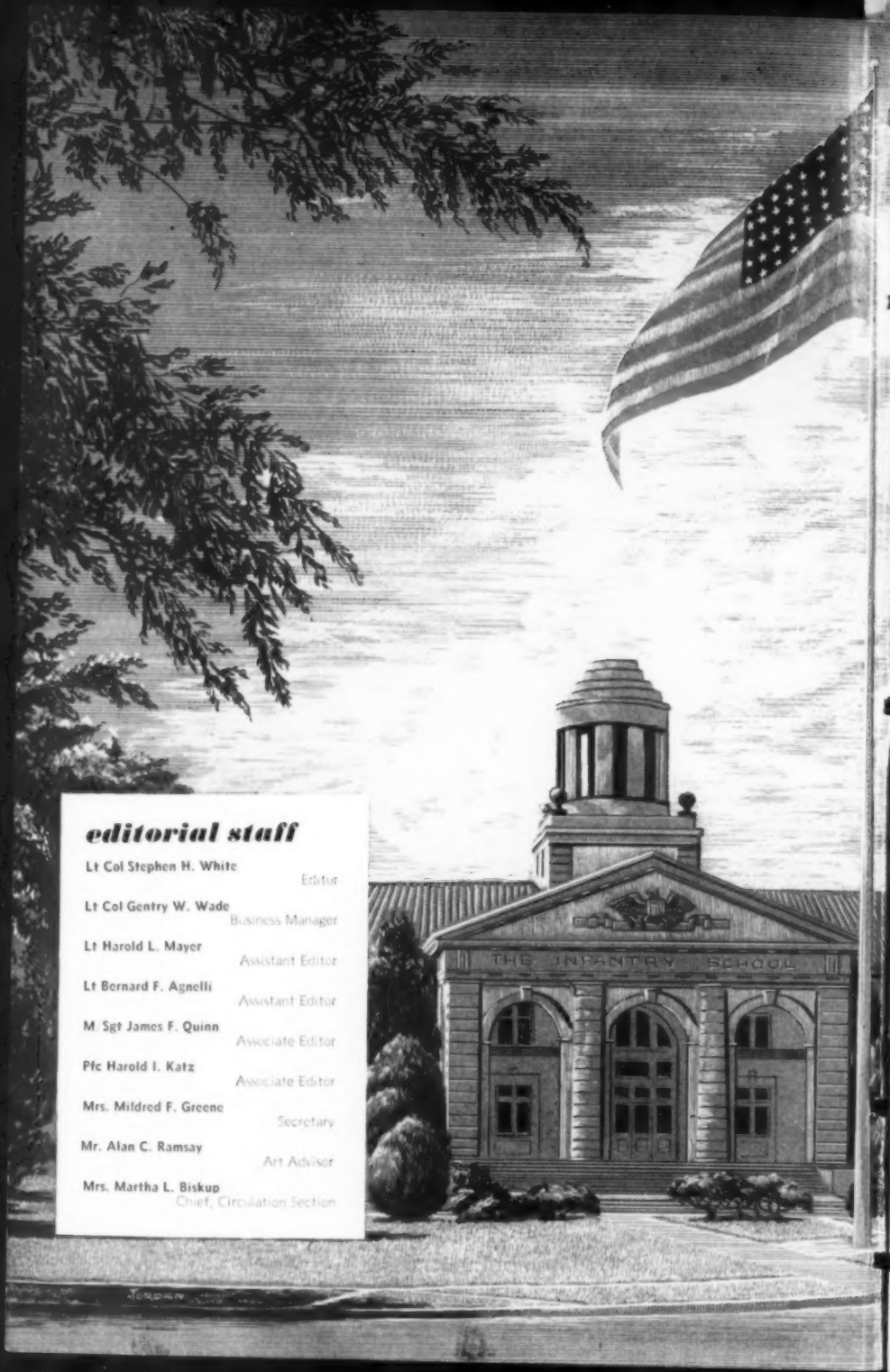
for

infantrymen

january 1957





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Infantry

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the infantry school

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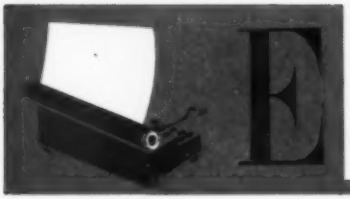

EDITOR'S PAGE

Dear Reader:

The impact of nuclear developments on the Army is reflected in recent instructions from Continental Army Command. In a letter on the preparation of training literature, CONARC has directed that our "training literature covering doctrine, organization, tactics, and techniques will be prepared based upon atomic warfare conditions."

While we will retain necessary instruction for conventional warfare, the emphasis now is placed on training for the atomic battlefield. The magnitude of this directive is apparent. It affects everything we are doing. Here at The Infantry School all Infantry field manuals and other training materials, including resident and nonresident instruction, must be revised or specifically written to reflect this emphasis.

As a result the *Infantry School Quarterly* assumes great importance. In this period of many changes, Infantrymen and those who work with Infantry need a quick, accurate source for information. The *Quarterly* is an extension of Infantry School instruction. It bridges the gap between revisions of manuals and other texts. It is the one place where you will be able to keep up with revisions, changes and new developments as they occur. You will know in advance what manuals and texts are being revised or prepared, what material they cover, and when they may be expected. You will get vital information quickly—as it is developed and approved—in articles and other materials prepared by the same people who are working on the texts.

In the months to come the *Quarterly* will fill an ever increasing need. As a reader, it is important that you bring this source of information to the attention of others throughout the active Army and the reserve components.

The EDITOR

Training for the atomic battlefield is being stressed in all instruction at The Infantry School. To make this training more realistic the School has developed an atomic-burst simulator. The visual effect of this burst (small photo) strongly resembles the real thing (large photo). Memorandum 51, Headquarters CONARC, 10 October 1956 explains how this simulator can be fabricated locally.

LETTERS TO THE EDITOR

Recruit Leaders

Sir:

Your lead article, "Dear Sir," by General Cook in the July 1956 *Quarterly* interested me so much and I disagreed with his approach so strongly, I was moved to write my own thoughts on the subject.

The current Army approach in recruiting college graduates for the professional officer corps is . . . unrealistic and unacceptable. . . . The Army needs leaders. Let's quit selling pensions and get back to recruiting leaders. Let's return to the matter-of-fact approach of our old recruiting posters and tell these young men: "Your Nation Needs *You!*" Let's sell that sense of service which no amount of financial reward can buy. It is this very purpose in life, the sense of accomplishment mentioned only briefly in General Cook's article, that few civilian professions can offer today's youth. As Patton said, "The highest obligation and privilege of citizenship is that of bearing arms for one's country." Leadership grows only from selfless dedication to a cause above oneself. Our present approach of baiting today's college youth with financial incentives will certainly not arouse that dedication. Aren't we recruiting, and encouraging, an undedicated officer corps?

What the Army needs is not a new approach, but its old one, typified by the recruiting poster—now retired—which showed an empty pair of worn, mud-caked combat boots in a deserted battlefield, and which asked simply, "Can you fill *these?*"

We must stress the fact that the Army offers plain, hard work. No other job will require more *of* a young man and, therefore, develop more *in* him. Every person yearns for realization of the best in himself, a chance to apply *all* his capabilities.

The responsibilities put on today's officer are enormous. The variety of problems facing him—in supply, mess, maintenance, administration, and in counseling and training the men under him—require far more of an officer than could any civilian profession. Yet these very responsibilities are sure to bring out in him the qualities every man would like most to find in himself.

Hard work! This, more than anything, is what the service offers. Let's admit it, and be proud of it. Let's recruit leaders who will enter the Army prepared to face their responsibilities realistically, and who will accept them as the challenge they are. Let's recruit leaders, and stop inviting an officer corps serving under delusions of a nine to five day, ever-increasing pay checks, and retirement after thirty years of free world travel.

Lastly, let's tell potential officers about the *Army*, and not about its fringe benefits. The Army is men, teamwork. Today's officer will be serving with men whose sole professional purpose is to forge with him a better Army and greater security for the American nation. The fellowship fostered by his association with

others dedicated by that same "sense of service" is the richest reward experienced by any Army officer.

Benjamin F. Schemmer
1st Lt, Infantry
Hq, V Corps
APO 79, New York

We readily agree that your approach is the ideal one. It is one we have used in the past and will always use. However, the hard cold fact is, it alone does not provide officers in sufficient numbers to meet our requirements. Until such time as we do attract sufficient officers—all of whom are dedicated to the Army—we must use the ideal and other *approaches that ultimately will help us to come closer to our goal.*

The ROTC cadet who has achieved the status of distinguished military student has evidenced a degree of interest and aptitude for the military. Many young men from this rather select group will make dedicated officers from the start. Others, when they have learned more about the service, will become the dedicated type we need. Many of our PMS&Ts who have used the ideal approach and failed to reach some of their better prospects apparently feel the same way. We have had a surprising number of requests from PMS&Ts for reprints of General Cook's article for distribution to their cadets. They tell us this approach may help us to get some of their outstanding cadets whom they know from personal observation to be excellent officer material.

Many of our best officers today were not dedicated initially. They would not have entered the service except for the crisis of war. But they became sold on the service and form a vital part of our officer corps.

We must seek out the exceptional young man and cultivate his taste for the service until he becomes the dedicated officer we desire.

We appreciate your interest. Your ideal approach will always be used. But from time to time we will supplement it with others which may give us more applicants to be screened and developed to know the true satisfaction of the service as we do.—Editor.

Squad Leader's Friend

Sir:

I am a squad leader in the 3d Marine Division, stationed in Japan.

I just thought you would like to know that the *Infantry School Quarterly* is being read on this level in the Marine Corps.

Your publication is a little scarce as evidenced by the fact that I have just obtained and read the April 1956 issue.

Sorry I'm late, but I must thank Capt W. F. Strobridge for his article, "Where Are Your Leaders?" It really hit home because it depicted my own position in February of last year. I was a corporal and had been a clerk for two years. My requests for reconnaissance and line companies had been turned down again and again until I finally convinced the "top" that I was being wasted. I hope other first sergeants and unit COs were impressed by the article.

The articles "Shooting in the Dark," "The Long Thin Line" and "Snakepots to Baseballs" have given me a lot of ideas and meat for subsequent instruction. The *Infantry School Quarterly* is a squad leader's friend.

R. F. Endert, Sgt. USMC
3d Marine Division
FPO San Francisco, Calif.

We are especially gratified by the number of comments we are receiving from our fellow Infantrymen in the Marine Corps—particularly those from noncommissioned officers like yourself. The primary purpose of the Infantry School Quarterly *is to help Infantrymen and*

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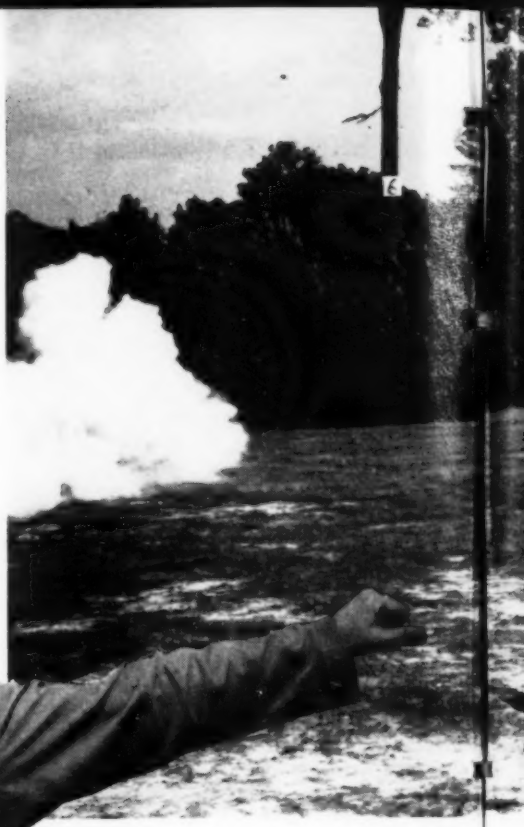
BATTLE DRILL



In the past we somehow have overlooked the training needed by individual soldiers and small units for the final, crucial moment of combat—how to move over those last yards of the assault to seize the objective. Battle drill will provide that training.

We are familiar with the importance of teamwork in the field of athletics. Football teams spend hours in daily drills to perfect their plays — running them over and over again against their opponents' formations. Basketball teams, hockey teams and others achieve the skill and teamwork necessary to win by constantly practicing offensive and defensive plays.

The rifle squad is a team. It is a team that must play and win in the grimmest game of all — the life-and-death struggle of combat. How can this basic combat unit practice and perfect, before the game, the skill and teamwork it must have to be successful when it steps onto the field of battle?

One way to coach this team is through battle drill — a training technique designed to develop the teamwork necessary for the rifle squad[1] to capture an objective after it has been halted during the assault phase of an attack. It trains the squad in the use of fire and maneuver to cover the final yards to the objective. Through repetition and practice battle drill teaches squad members to function aggressively and correctly amid the noise and confusion of battle when detailed orders or instructions cannot be given.

Battle drill is not entirely new. For years we have been teaching small units fire and movement and the use of various combat formations. However, this training usually stops at the assault phase because we have assumed that once the assault begins we take the objective. Com-

[1]Battle drill also can be used by platoons. However, this article considers only squad battle drill.

This article was prepared through the combined efforts of The Infantry School's Tactical Department and the 3d Infantry Division, Fort Benning. Particular assistance was given by Lt Col John A. Rankin, who helped develop battle drill while G3 of Maj Gen J. C. Fry's 2d Infantry Division in Korea and who has worked with it under another strong advocate of battle drill, Maj Gen George E. Lynch, Commanding General, 3d Infantry Division. Lt Jere N. Moore, Public Information Office, 3d Division, also contributed to its development. Much of the material in the article comes from the draft of a training circular on "Combat Formations and Battle Drill" now being prepared by the Tactical Department, The Infantry School.

bat has repeatedly revealed this to be faulty thinking. An assault frequently is bogged down; and unless the squads and platoons know how to advance after being stopped by short-range enemy fire they fail to take the objective and frequently are pushed off the ground they have gained.

Realizing this, some commanders during World War II developed their own versions of what is now called "battle drill" and trained their units to deploy quickly and automatically into proper combat formations and to use fire and maneuver as they attacked and assaulted objectives.

However, this particular concept in which individuals and small units repeatedly run combat *plays* for any type of situation and terrain was not published until December 1952, when Maj Gen James C. Fry, Commander of the 2d Infantry Division in Korea, included his system of battle drill in a division training memorandum. He had used battle drill successfully during the Italian campaign in 1944 while commanding the 350th Infantry Regiment. In Korea he found that many troops were not closing with the enemy in the final phases of the assault. Interviewing a number of outstanding men who had won the DSC or Silver Star by closing with the enemy he found that they had invariably developed some sort of "play" when enemy fire pinned them down. These men complained that their training left them at the assault position. Once they fixed bayonets and moved through that position they were expected to advance as though the enemy didn't exist. Unfortunately, such ideal conditions seldom existed. Advancing units too often were halted by fire during the assault and failed to take their objectives.

Gen Fry's solution to this problem was battle drill — to be used when units were forced to hit the ground in either the attack or the assault. Battle-drill techniques ordinarily would be employed against unexpected resistance that may be encountered between the line of departure and assault position or in the event the assault is stopped by effective enemy fire. In both cases, immediate action is required without lengthy orders. Ordinarily battle drill will not be needed until a unit has advanced to within 200 yards of its objective; in most situations a unit probably could get within 50 or even 20 yards of the objective before being forced into its fire-and-maneuver plays.

The 2d Division employed battle drill successfully and other units in Korea adopted it. The commander of the 1st Battalion of the 5th RCT said his unit never could have retaken Outpost Harry without preliminary training in battle drill. Gen Fry wrote articles on battle drill for the April and May 1953 issues of *Combat Forces Journal*. Since then,

the advantages of battle drill have become more widely recognized.

Gen Fry expanded his 2d Division training memorandum into a book, *Assault Battle Drill,* (Military Service Publishing Company, 1955) to show small units HOW to take an objective with minimum casualties. He maintained that field manuals stop with generalities of WHAT should be done. His methods are not in conflict with current concepts but rather are refinements and further extensions of our present small-unit training.

Late last year CONARC directed The Infantry School to review Gen Fry's book, to comment on the appropriateness of the techniques it discusses and to explore the possibility of including these techniques in FM 7-10 or other training literature. In accordance with this directive The Infantry School prepared a training circular on combat formations and battle drill and will conduct instruction in these subjects when the circular is published. Eventually this material is to be included in FM 7-10.

The 8th Infantry Battalion of the 3d Infantry Division at Fort Benning began practicing battle drill last March. A squad from the battalion demonstrated battle drill before all rifle companies of the division and the training soon became division wide.

This article discusses battle drill formations for both the nine-man rifle squad used in present TOE Infantry divisions and for the 11-man rifle squad (being tested by the 101st Airborne Division) with its two fire teams.[2] The nine-man squad consists of a squad leader (number 1), five riflemen (numbers 2, 3, 4, 7 and 8), two automatic riflemen (numbers 5 and 6) and an assistant squad leader (number 9). The 11-man squad, organized under the ROTAD concept,[3] includes a squad leader (number 1), two team leaders (numbers 2 and 7), six riflemen (numbers 3, 4, 6, 8, 10 and 11), and two automatic riflemen (numbers 5 and 9).

Although designed specifically for squads and platoons, battle drill may be used as a guide for other small units requiring tactical grouping for movement under combat conditions.

Battle drill is taught under two major headings: individual and team. Individual training includes emphasis on marksmanship, combat training, battlefield signals, terrain appreciation, battle actions, elementary fire and maneuver. Team training begins with formations and goes on to terrain appreciation, fire-and-maneuver exercises and, finally, preliminary and advanced squad battle drill.

Initial training stresses the development of fundamental combat skills in the individual soldier. The platoon leader or company commander gives an opening orientation which discusses the importance of battle drill and the part it plays in the over-all success of a unit. The training begins with the squad leader emphasizing the importance of marksmanship. He then instructs his men to recognize and use cover, to conceal themselves while observing or firing on the enemy, to crawl toward the enemy and to fire and move toward an enemy position in a series of rushes from one firing position to another. Each individual must achieve proficiency in all these skills before he can contribute to the coordinated and effective team play of his squad.

Because of the noise, speed and confusion of battle, particularly during the assault phase, battlefield signals for squad maneuvers replace lengthy verbal orders. Consequently, each individual must be

[2]For more about this squad see "Those Who See the Whites of Their Eyes" by Maj Gen A. D. Mead in the July 1956 issue of ISQ.
[3]ROTAD: Reorganization of The Airborne Division.

trained thoroughly in the use of arm-and-hand and whistle signals (Figure 1). Both types are used habitually along with oral commands throughout battle-drill instruction.

Battle drill requires a study of all types of terrain by all members of the squad. Each man must be able to determine quickly the effect of terrain on the squad's courses of action and how to make best use of the advantages it offers. This requirement develops coordinated thinking and results in quick, effective action by all members of the squad. Squad members study the terrain and give their observations to the squad leader who makes an over-all evaluation of the area, including:

1. Probable location of the enemy.
2. Vulnerable points in the enemy's defenses.
3. Routes of approach toward the enemy position which will exploit his weaknesses.
4. Positions from which to establish fire support along the routes of approach.
5. Avenues of maneuver that afford some measure of cover and concealment.

Practical application of terrain evaluation, over every available type of ground that may be met by Infantrymen in combat, continues until the majority of the squad reaches the same decisions instantly and instinctively. The next step is training over a battle-action course.

Before taking his men through this course (Figure 2) the squad leader explains its purpose and discusses local ground rules. The squad then observes a demonstration or goes through a dry run on another course or a smaller piece of terrain.

Individual battle-action exercises train the soldier to select the best cover and avenues of approach, to develop the ability to move forward on the battlefield while presenting a minimum target and to locate enemy positions while rushing. Squad members must select firing positions while moving rapidly; see, but not be seen; and, without unduly delaying their advance, choose the route forward which offers the best cover and concealment.

These exercises, controlled and supervised by the squad leader, are repeated until all members of the squad have displayed proficiency in running through them. The squad leader critiques individuals after each running, covering their

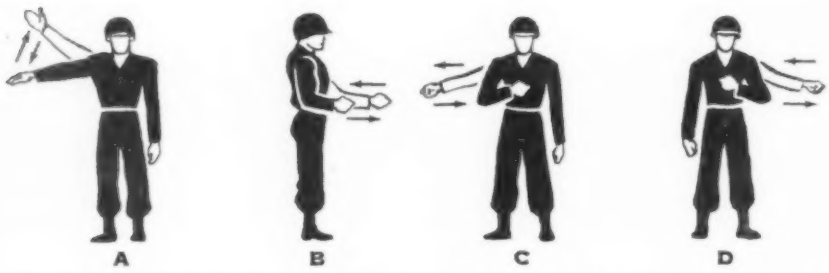


Figure 1. Basic signals: A—Attention. Extend arm sideward and slightly above the horizontal; move toward head repeatedly; whistle: one short blast, repeated if necessary. B—Move forward (frontal attack). Thrust fist repeatedly to the front; whistle: series of short blasts. C—Maneuver right. Thrust fist repeatedly to the right; whistle: two short blasts, repeated if necessary. D—Maneuver left. Thrust fist repeatedly to the left; whistle: three short blasts, repeated if necessary.

method of starting from the firing position, running from one firing position to another, choice of firing position, methods of getting into positions and the use of cover.

From individual battle actions, the squad goes to elementary fire-and-maneuver exercises which teach the beginnings of teamwork. The entire squad does not yet operate as a unit in this transitional phase; instead, the men learn to work together in two- and three-man groups. Repetition of realistic fire-and-maneuver exercises enables squad members to practice the principles of team play in attacking and assaulting enemy positions.

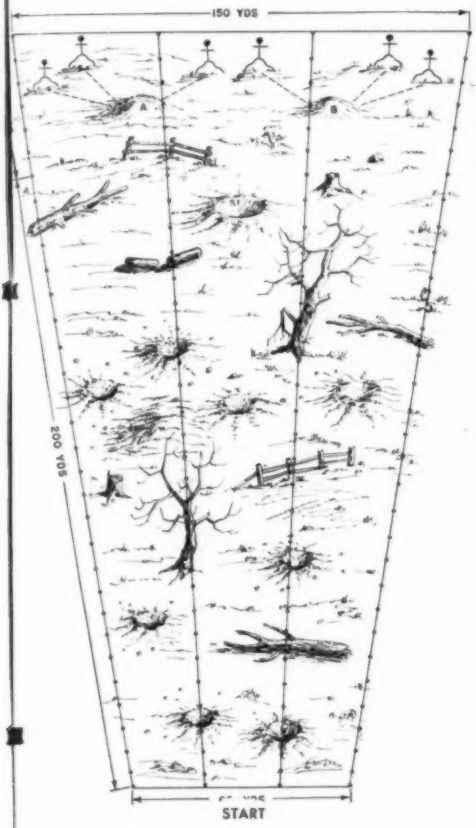


Figure 2. Battle-action course.

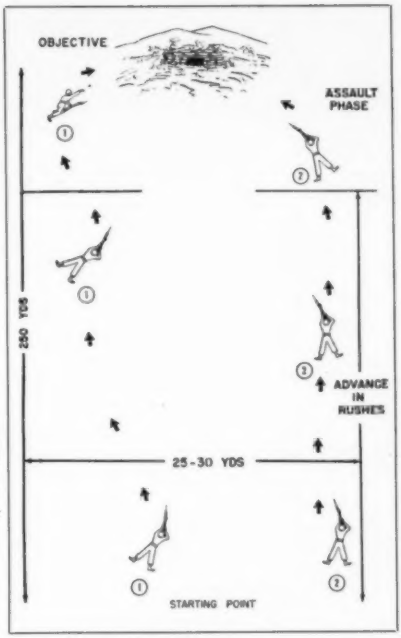


Figure 3. Fire and maneuver—Phase I.

After an orientation similar to that for the battle-action course, training in elementary fire and maneuver begins. This first phase is the same for the nine-man squad and the 11-man squad. It brings the principle of fire and maneuver down to the basic two-man team and is restricted to an area 25 to 30 yards wide, with at least 10 yards between men (Figure 3). One man rushes to a firing position while the other takes up the fire. By alternately firing and moving both men arrive within handgrenade range of the enemy target, where the number 1 man throws a simulated grenade and both men assault the position simultaneously.

The second phase of the fire-and-maneuver exercises takes place in an area

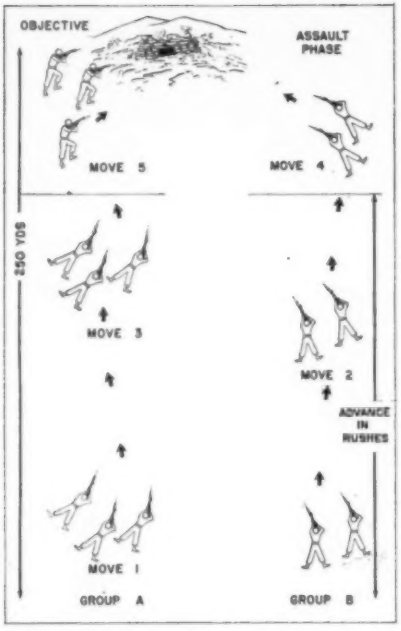


Figure 4. Fire and maneuver—Phase II.

250 yards long and 100 to 120 yards wide (Figure 4).

The nine-man squad in this phase is divided into four groups (A, B, C and D) of two or three men. Two groups participate while the other two observe. With at least 10 yards between men and 20 yards between groups, the two groups move toward a starting position in parallel columns. At a signal indicating they have come under effective fire, they hit the ground and attempt to locate the enemy positions. Numbers 2 and 3 of group A move by rushes until they are generally on line with group B number 1 man. As soon as the enemy is located, the number 1 man of group A starts the advance by rushing a short distance toward the objective, covered by the fire of the other members of groups A and B. When he reaches a new position and takes up the fire, the number 2 man of group A moves up to a new firing position, begins to fire and is followed by the number 3 man. When all members of group A have taken up new firing positions, group B begins its advance. Number 1 man rushes to a new firing position, followed by number 2 man. Each group advances alternately until they reach a position within handgrenade range of the enemy. At the group leader's signal all members of group A throw grenades at the enemy target. When the grenades pop, both groups move toward the position, forming an assault line at a rapid walk and firing well-directed shots from the hip or shoulder.

The 11-man squad goes through the second phase in much the same way. Each five-man team is divided into two groups (A and B). Alfa team, with a minimum of 10 yards between men and 20 yards between the two groups, participates while Bravo team observes. The team leader controls one of the groups while one man in the other group is designated its leader. After hitting the ground at the effective-fire signal the numbers 3 and 4 men (in group A) move by rushes until they are generally on line with number 2 man, the team leader. The number 6 man (who is with group B) moves in a rush to a position generally on line with number 5 man. As soon as the enemy is located the team leader, in group A, starts the advance by rushing a short distance toward the objective. When he reaches a new position and takes up the fire against the enemy, the number 3 man of group A moves up to a firing position, begins to fire and is followed by the number 4 man of group A. When group A has taken up new firing positions group B begins its advance. Number 5 man moves up first; he is followed to a new firing position by number 6 man. Each group alternates in the advance until both reach positions within handgrenade range of the enemy position. At the team leader's signal all mem-

bers of group A throw simulated grenades at the target. Subsequent actions are the same as those for the nine-man squad.

Blank ammunition and an aggressor detail or the use of live ammunition and silhouette targets inject realism into these exercises. Groups and teams are alternated until each member of the squad displays proficiency in every role and in each position within the squad. Most training areas or firing ranges can be used for these elementary fire-and-maneuver exercises.

A critique at the conclusion of each running of the exercise covers timing, teamwork in movement and the assault, selection of firing positions, proper methods of rushing and full utilization of the terrain. Errors by individuals are corrected.

Once the riflemen have learned the rudiments of teamwork they enter the squad phase of battle drill which begins, like other phases, with an orientation on a blackboard or sandtable and a realistic demonstration of what a trained unit can do with battle drill.

For this final phase of the drill the nine-man rifle squad is divided into two interchangeable teams — for fire support and maneuver. The squad leader and numbers 2, 4, 6 and 8 men form team Alfa while the assistant squad leader and numbers 3, 5 and 7 form team Bravo (Figure 5).

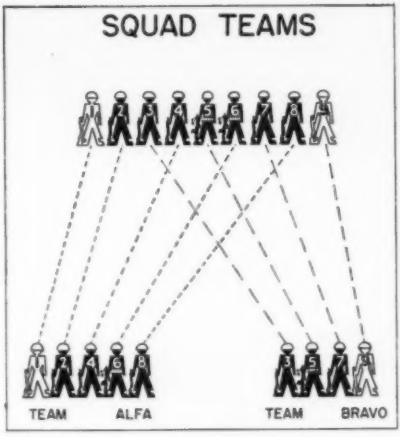


Figure 5. Basic method of dividing the nine-man rifle squad into two teams.

The 11-man rifle squad is organized into two teams (Figure 6), each with a leader to assist the squad leader in control. Team Alfa is made up of numbers 3, 4, 5, 6 and is controlled by number 2. Team Bravo consists of numbers 8, 9, 10, 11 and is controlled by number 7.

Regardless of the size of the squad engaging in battle drill, team Alfa usually acts as the maneuvering group when the action is to the right; fire support is

Figure 6. The teams of the 11-man rifle squad.

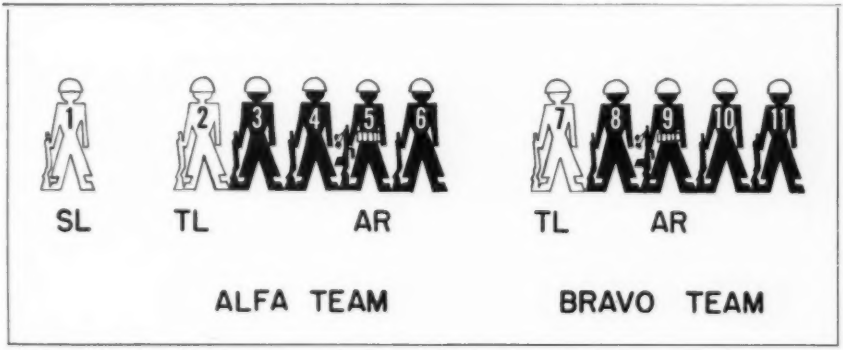


Figure 7. Alternate method of dividing the nine-man rifle squad into two teams. This is the method used by the 3d Infantry Division.

provided by team Bravo. Team roles are reversed when the action is to the left. In a frontal attack, team Alfa maneuvers while fire support comes from team Bravo.

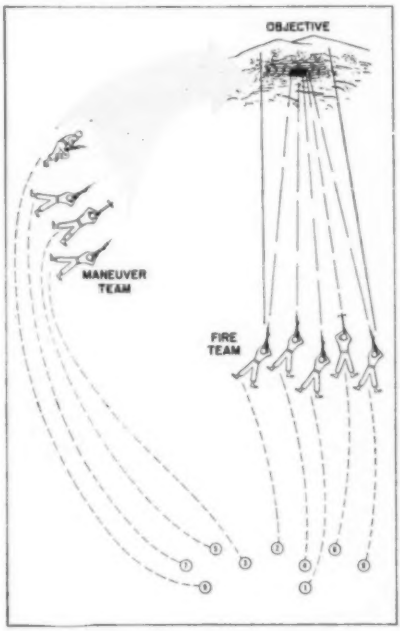
In all actions and maneuvers the fire-support team continues to engage enemy targets until its fires are masked. Then it joins the maneuver team in the assault and consolidation on the objective.

As the roles of the two teams are interchangeable, the maneuver team, when prevented by enemy action or the terrain from overrunning the enemy's position, takes up the fire-support role and covers the advance of the fire-support team which assumes the maneuver role.

An alternate division of the squad may be made when the terrain offers an extremely advantageous fire-support position for increased accurate fire on the enemy. In the alternate plan for the nine-man squad the squad leader and numbers 2, 3 and 4 men form the maneuver team while the assistant squad leader and numbers 5, 6, 7 and 8 furnish fire support. In the alternate organization for the 11-man squad numbers 5, 6, 9, 10 and one of the team leaders (designated by the squad leader) make up the fire-support element, with the rest of the squad acting as the maneuver element. These teams are not interchangeable and can be used only when the enemy situation is clear and there are excellent positions for fire support. The reason for this is obvious: both automatic rifles are placed with the fire-support team.

The 3d Division, organized under the ATFA (Atomic Type Field Army) concept, uses a slightly different system. Its battle drill calls for a maneuver team and a fire team — as in the alternate nine-man-squad plan described above — which are not readily interchangeable (Figure 7). Although battle-drill techniques differ slightly according to the concept under which a unit is organized all versions use similar methods to achieve the same end — squad teamwork.

Figure 8. Nine-man squad executing maneuver left from as skirmishers.[4]



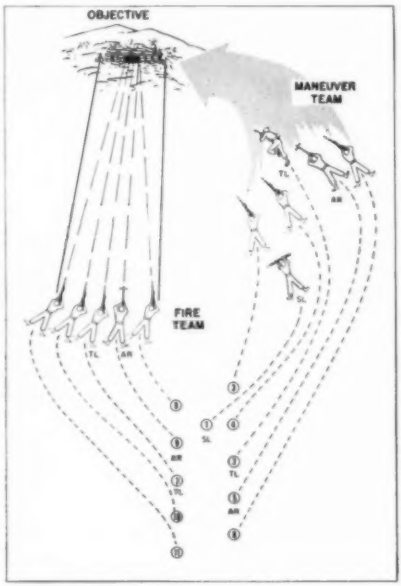
The 3d Division gives proficiency tests to individual riflemen and to the entire squad after the individual and team phases of battle-drill training. Commanders of TOE units can devise their own methods of testing for proficiency.

The rifle squad, now divided into two teams, next learns the three basic maneuvers which apply to almost all combat situations: maneuver left, maneuver right, frontal attack (Figures 8, 9 and 10). The squad leader selects the proper maneuver and starts the team play. The plays can be executed from the various formations in which the squad normally moves in combat.

The rifle squad as a team employs battle-drill maneuvers usually when:

1. The assault has been stalled because effective enemy fire on the assaulting troops has not been silenced or reduced by friendly supporting fires.

Figure 9. Eleven-man squad maneuvers right from squad column.[4]



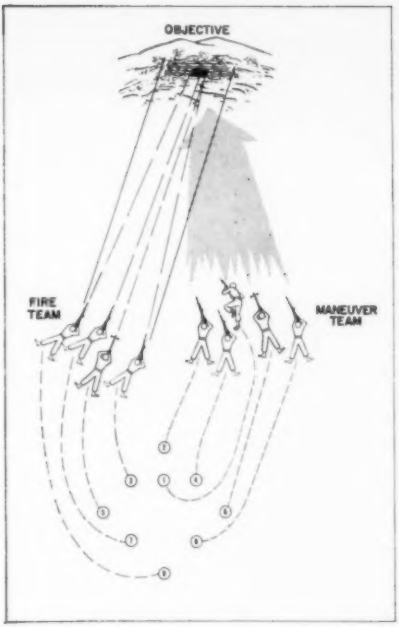


Figure 10. Nine-man squad in frontal attack from squad diamond.[4]

2. Intermediate resistance is met on the way to an assault position.

3. The squad, as the point of the advance guard, meets resistance.

Each member of the team should know at all times what every other member is doing and what action is required on his part to help in the team's task of destroying the enemy. All action is carried out rapidly with as few orders as possible.

Squad maneuver training should begin on level, open terrain such as a parade ground or similar area. Squads are divided into teams and their missions and actions in the various maneuvers are explained in detail to insure that all members understand the requirements and purposes of the drill.

The squad teams are walked through the plays first, using combat formations

[4]Both the nine and 11-man squads execute this maneuver in a similar manner from the other basic squad formations.

(squad column, diamond or as skirmishers) as points of departure in execution. Training on irregular terrain begins once each member of the squad fully understands the part he is to perform in each of the preplanned plays and is able to carry out his actions smoothly and automatically.

Training the full squad includes repeated emphasis on terrain analysis. An enemy position is selected where each man can be seen. The team designated as the maneuver team selects a route from a starting point to the objective. The fire-support team observes the route taken and selects firing positions it would use to lend close support to the maneuver element.

In calling for the "play" which will best accomplish the mission the squad leader will be influenced by the location and disposition of the enemy, the terrain available for maneuver and the location of suitable fire-support positions.

After reaching his decision the squad leader commands and signals his squad: *maneuver left, maneuver right,* or *frontal attack*. The two teams then execute the indicated battle-drill maneuver.

After the squad achieves finesse in its battle drill, it can go on to more advanced training. Here the squad encounters noise, exertion and fatigue as it attacks and assaults enemy positions. Simulated supporting fires, demolitions and smoke provide a certain amount of realism. The squad moves out on the course in an appropriate combat formation and crosses the line of departure. At a point selected by the instructor the unit comes under aggressor fire. The squad leader signals for the desired maneuver and the squad, using blank ammunition and practice handgrenades, executes the battle-drill play to knock out the enemy.

Just before the squad actually reaches the aggressor position, the exercise is halted and a critique is held in the immediate area. Squad, team and individual actions during the exercise are discussed including:

1. Ability of the squad members to locate or detect the enemy position.
2. Leadership, knowledge and initiative displayed by the team leaders and the individual members of the squad.
3. Correct signals employed by the squad leader to initiate the maneuver.
4. Selection of effective firing positions by the fire-support team.
5. Selection of an advantageous route of advance by the maneuver team.
6. Actions of the automatic riflemen in remaining close to their leaders and effectively covering the target area.
7. Unnecessary bunching or exposure during the movement forward.
8. Timing and teamwork demonstrated by all members of the squad.

This realistic exercise is repeated over every possible type of terrain. Through its repetition the men gain confidence in their own ability and in the coordinated action of the squad in approaching, attacking and assaulting enemy positions. Each individual becomes confident of his own ability to assume any position in the squad — rifleman, AR man, team leader or squad leader. As this teamwork reaches a peak in the final phase of squad drill (live-firing exercises over selected ranges) it takes fewer and shorter orders to control the squad. The squad has become a smoothly functioning team which, almost automatically, does the right thing.

Battle drill molds the individual rifleman into a team member capable of playing any position, including that of the leader, in the event of casualties. It places every man in the right place at the right time, giving the rifle squad all-around security and the ability to place maximum fire in any direction in minimum time.

Constant drill in these combat "plays" will put a winning team on the field of battle.

Soldier's Creed

"I am an American soldier. I am a man of the Army of the United States — a protector of the greatest nation on earth. Because I am proud of the uniform I wear, I will always act in ways creditable to the military service and the nation it is sworn to guard.

"I am proud of my organization. I will do all I can to make it the finest unit of the Army. I will be loyal to those under whom I serve. I will do my full part to carry out orders and instructions given me or my unit.

"As a soldier, I realize that I am a member of a time-honored profession—that I am doing my share to perpetuate the principles of freedom for which my country stands. No matter what situation I am in, I will never do anything, for pleasure, profit or personal safety, which will disgrace my uniform, my unit, or my country. I will use every means I have, even beyond the line of duty, to restrain my Army comrades from actions disgraceful to themselves and the uniform.

"I am proud of my country and its flag. I will try to make the people of this nation proud of the service I represent, for I am an American soldier."

By Col

T. C. Mataxis

THE SOVIETS CLOSE THE GAP

With the final collapse of the Axis powers following World War II our national concern for security suddenly switched to cries of "Get the boys home." In this atmosphere, the rapid dissolution of the world's most powerful armed forces began. Soon all that was left of the great U.S. Army was a corporal's guard of untrained soldiers capable of little more than occupation duties. In the years that followed additional cuts were made which further emasculated our army as an effective combat force. We are familiar with our plight at the outbreak of conflict in Korea.

This background was not conducive to the support and long-range planning needed for the development of new weapons and organizations. In fact, with the large stores of World War II weapons on hand a research-and-development program for new weapons was looked on by some as an unnecessary luxury which fell into the category of "fat to be cut."

On the other hand, the Soviets did not scrap their armies after the war. Instead they launched a vast modernization program designed to close the gap in the quality of equipment between their armed forces and those of the western allies. This program was designed to overcome deficiencies in weapons and to increase mobility. Only recently have we become fully aware of this program as tangible results have come increasingly to light. The Soviets now have a complete and deadly family of weapons ranging from a new pistol to an 8-inch rocket, 9-inch mortar, and 203mm gun-howitzer, the last three of which can deliver atomic missiles. Their recent advances in developing modern weapons and equipment surpass capabilities originally credited them. Horse carts and obsolescent trucks have been replaced by a modern series of vehicles which approximate and may even surpass the best the West has to offer. They also have recognized the vital role

Current Soviet developments in weapons and tactics surpass capabilities orginally credited them.

Figure 1. Semiautomatic rifle.

which the helicopter will play in future war—especially in atomic war—and have produced a whole family of rotary-wing aircraft. It is apparent that they intend their large army to play a principal role in a possible war against the West whether or not atomic weapons are used.

The possible use of tactical atomic weapons has posed problems for the Soviet Army as it has for the U.S. Army. Undoubtedly it also has caused a reappraisal of their current doctrine and tactics. The broad trend of Soviet thought concerning tactical employment of nuclear weapons on a future battlefield is now easy to discern. A recent issue of *Krasnaya Zvezda* summarizes the Soviet view: "Troops that are well trained for action under conditions when atomic weapons are used can successfully carry on combat action, can attack and can defend themselves and carry out any combat mission assigned." While it is recognized that two-sided atomic warfare would not alter fundamental operational principles and while it is visualized that the essential elements of ground combat will still remain fire and maneuver, the impact of nuclear firepower dictates a need for vastly increased mobility and flexibility in all units. The key to success on the atomic battlefield lies in the ability to disperse widely, to minimize the effect of an enemy nuclear strike, while yet retaining the ability to mass large elements at a critical point.

In the Soviet Army, as in our Army, new organizations will undoubtedly be developed and tested over the next few years in an effort to develop the best organizations for use on the nuclear battlefield. However, as in our own tests of new organizations and weapons in exercises such as Follow Me, Sagebrush and Blue Bolt, many changes will undoubtedly take place before new Soviet organizations or weapons are finally adopted. Consequently, we must be familiar not only with current Soviet organizations and weapons, but also with those under development and test if we are to be prepared to face any combination of weapons or units the Soviets could possibly use against us.

As tactics for use on the atomic battlefield slowly evolve, they bear great resemblance in most instances to the basic doctrines from which they are derived. To better understand future Soviet tactics, it is important that we study and follow closely their current doctrine and developments.

While Soviet military leaders have shown an increasing awareness of possible tactical use of atomic weapons in a future conflict their doctrine does not reduce the role of their Army. A recent issue of *Sovietskaya Armiya* states: "Atomic weapons pose certain problems in warfare but they must not be overestimated. Soviet military art assumes that this new means of combat not only does not reduce but, on the contrary, enhances the part played by the foot soldier

and raises his role to a new level. The outcome of an engagement will still be decided by men strong in spirit, physically hardened, knowing how to employ first-class equipment and possessing high morale-combat qualities. There are means and methods for protection. Soldiers who know and are able to apply them will carry out missions in the face of enemy atomic weapons."

We know that Soviet strategy in World War II was based primarily on massive ground forces supported by air and naval elements. Although this strategy has undergone some modifications since that time, the Soviets continue to maintain large ground forces. And they are constantly improving their capability of overrunning the Eurasian land mass to absorb its industrial, natural and manpower resources. Soviet organizational principles, in accordance with their tactical theories, continue to place tactical air units under the command of the Front (Army Group) Commander to insure maximum effectiveness of close air support to front-line units. Air doctrine has constantly stressed the supporting role of aviation. Major General of Aviation A. Zaitser recently wrote: "It is necessary to remember that combined action is organized in the interests of Infantry troops, which, as is well known, fulfill the main role in battle."

Figure 2. Submachinegun.

In line with this thinking the Soviets have stressed the development of a completely modern series of weapons to increase the effectiveness of their ground forces. Although originality of thinking is rarely found in Soviet weapons, their engineers have demonstrated that they can exploit and improve on the best features of foreign designs and incorporate them into Soviet weapons. An example of this is the new family of small arms, three of which fire a rifle round similar to but slightly shorter than the NATO 7.62mm round. This new family of small arms consists of a semiautomatic rifle, a submachinegun and a machinegun all firing the new cartridge. The development of this new cartridge was undoubtedly influenced by the short 7.92mm cartridge developed by the Germans for a new machine pistol (MP44) during World War II and noted at the time by ordnance experts as being one of the outstanding small-arms developments of the war.

Let's take a look at these weapons.

Rifle. The new semiautomatic rifle (Figure 1), called a carbine by the Soviets, is to replace the Moisin bolt-action rifle they used during World War II. It has a shorter effective range than its predecessor, but is more accurate at the shorter range and has far greater firepower.

Submachinegun. The new gas-operated submachinegun (Figure 2) is a

radical departure from the standard Soviet submachinegun used in World War II and in Korea. The new cartridge gives it longer range and makes it more powerful and more versatile than its predecessor.

Machinegun. The new machinegun, shown along with the rifle and submachinegun in Figure 3, is a squad weapon. It also uses the new rifle cartridge. This increases the amount of ammunition that can be carried in combat by the ammunition bearer and also increases the effective fire which the weapon is able to put out. Note the drum magazine which contains the belt.

In addition to these, other small arms, including a new 9mm pistol, have been developed. The new pistol is equipped with a 20-shot magazine and a wooden shoulder stock that doubles as a holster. It is capable of automatic and semiautomatic fire for short-range firing.

Next, let's take a look at a few of the new developments in field artillery, an arm which the Soviets have traditionally relied upon for saturation fires in support of the Infantry. The Soviets' entire new artillery system includes not only guns of impressive mobility and effectiveness, but a new family of tracked prime movers for rapid emplacement and dispersal. This artillery, like all other newly issued ground force material, can move with speed over modern highways, in contrast to weapons of the World War II era which were designed largely for movement along the dirt and mud roads which interlace the USSR.

122mm gun. The new 122mm gun (Figure 4) has about 10% greater range and can be emplaced and put into action against enemy targets with far greater speed than the 122 of World War II. In modernizing this gun the Soviets borrowed from the best factors of German artillery design.

The 152mm howitzer. The 152mm howitzer which was highly effective in World War II but which was so heavy and cumbersome that it frequently bogged down in the field, has been replaced

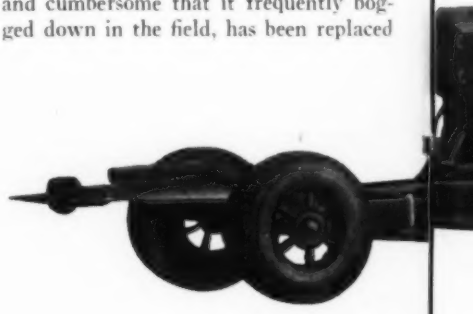


Figure 3. Rifle, submachinegun, machinegun.

Figure 4. 122mm gun.

Figure 5. 203mm gun-howitzer.

by a new weapon that is much more mobile as the result of a new carriage mount. The range has been increased nominally, largely through improved ammunition.

203mm gun. One of the most impressive developments, however, is the new Russian 203mm gun-howitzer (Figure 5) which can be emplaced and ready to fire in a matter of minutes. It replaces a World War II version that required hours to make ready for firing. The new gun has a 50% increase over the range of the 203 used by the Soviets during World War II. This gives the Soviet Army an extremely mobile artillery piece with an atomic delivery capability.

240mm mortar. While mortars are normally considered Infantry weapons, providing close support to foot soldiers, the Soviets have used king-size mortars as comparatively inexpensive substitutes for artillery. The 240mm mortar (Figure 6), the largest-caliber weapon of its type in use by any army, is readily transportable by tractors or trucks. The new 240 incorporates design principles which

Figure 6. 240mm mortar.

give it far greater range and accuracy than World War II models. It can be employed for close support or long-range fire using conventional or atomic shells.

Rocket launchers. Long-range and highly accurate multiple rocket launchers mounted on trucks for fast movement (Figure 7) also are making their appearance with Soviet Army units. Much improved over earlier Russian launchers and rockets, they include a 12-unit eight-inch rocket launcher for special-type rockets. These weapons are mobile. They can be employed with ease and can deliver a tremendous amount of high explosive on target in a short time. The larger rockets complement and are an adjunct to the normal artillery weapons and their capability for atomic delivery must not be overlooked.

Antiaircraft weapons. Newly added to the Soviet family of antiaircraft guns is a 122mm weapon designed to protect against aircraft flying at high altitudes. It is known to be equipped with fire-control radar. In addition, new 100mm Russian antiaircraft guns (Figure 8) have been placed in the hands of troop units in the field, rather than being limited to the protection of strategic targets such as industrial areas.

The 100mm AA gun is highly mobile and also equipped with radar-directed fire control. It replaces a mediocre World War II 85mm gun with slow and poor fire control. This weapon is extremely versatile and can be depressed for secondary use as an antitank weapon.

For defense against low-flying aircraft, the Reds have produced a fully automatic 57mm gun capable of being fired by either remote-controlled radar or simple optical sights. It has double the rate of fire of the 37mm gun which it replaces.

Also for protection against low-altitude attack the Soviets have developed a 14.5mm AA weapon in two- and four-barrel versions which replace the single-barrel 12.7mm antiaircraft machinegun formerly found in Soviet units.

Tanks. The outstanding armored vehicle developed by the modernization program is a new medium tank which succeeds the T-34, the weapon that proved so effective against the Germans in World War II. The new tank combines the best features of the T-34 with numerous changes which include a lower silhouette, improved slopes and surfaces which tend to deflect enemy fire. A 100-mm gun replaces the 85mm with which the T-34 was armed. This gun will penetrate thicker armor at greater distances and is equipped with an excellent fire-control system for rapid and accurate firing. There are indications that the new tank is also equipped with high-quality night-firing devices. Its speed is at least equal to, and probably far exceeds, that of the T-34. Already produced by the hundreds, this tank is being issued to Red armored divisions as a standard weapon. In conjunction with improved tanks, the

Figure 8. 100mm antiaircraft gun.

Figure 7. Truck-mounted, multiple 8-inch rocket launcher.

Figure 9. Armored personnel carrier.

Soviets are equipping many of their units with a new 6 x 6 armored personnel carrier (Figure 9) to improve Infantry mobility.

Helicopters. The Soviet modernization program has not overlooked the helicopter as an answer to the need for greater mobility and flexibility. Extensive development of copters has been undertaken. Their rotary-wing aircraft fall into three main categories—a light reconnaissance-utility helicopter, a medium cargo helicopter and a heavy helicopter.

The light reconnaissance-utility helicopter, known as the Hare (Figure 10), is similar to our H-13 and H-23. It is extremely versatile and can be used for command missions, reconnaissance or even limited supply missions in emergencies.

A cargo-type helicopter known as the Hound (Figures 11 and 12) is available in quantity to the Soviets. Similar to our H-19, it is capable of transporting jeeps, field artillery pieces and other items of ground force equipment. It has an estimated pay load of 4000 pounds and has

Figure 10. Hare, reconnaissance-utility helicopter.

clamshell doors at the end of the fuselage for simplified loading and unloading.

A new heavy, twin-rotor helicopter known as the Horse (Figures 13 and 14) has been developed. It has an engine for each rotor, and one engine can take over both rotors if the other engine fails. It is believed to be a combination troop-cargo carrier capable of carrying more than 40 soldiers plus crew, and has a pay load of 10,000 pounds. It has clamshell doors at the end of the fuselage for simplified loading of cargo, which may include a weapons carrier and a fieldpiece.

As can be seen this comprehensive modernization and re-equipment program has given the Soviet ground forces a greatly increased potential for combat on either the atomic or conventional battlefield. Secretary of the Army Wilber M. Brucker has said that the Soviet re-equipment program is an accomplished fact. "These weapons are now at the disposal of Red Army units, not on the drawing board nor in initial stages of production." Their newer and more numerous trucks, improved tanks, armored personnel carriers, light and mobile artillery, and excellent cargo-and-personnel-carrying helicopters, all indicate a high capacity for operations in small self-contained, well-dispersed task forces. Such tactics could well be directed toward reducing the effectiveness of tactical atomic weapons used defensively by any potential enemy.

Figure 11. Hound, cargo helicopter.

Our past experiences have taught us that the policies of the Soviet Union, although sometimes apparently lacking in consistency and in ethics, certainly have not been unrealistic. Soviet leaders have been especially zealous in insuring their military strength.

Figure 12. Clamshell doors facilitate loading of equipment into the Hound.

Figure 13. Horse, troop-cargo helicopter.

Today, we and our Western allies remain seriously outclassed in numbers of fighting men and we appear merely to be keeping pace in technological developments. The Soviets are rapidly closing the gap.

Figure 14. Vehicles and artillery pieces can be driven up a ramp into the Horse.

COL THEODORE C. MATAXIS is a frequent contributor to the *Quarterly* and other service publications (see "Defense on the Atomic Battlefield," July 1956, and "Atomic Fire Support," October 1956). He has had a number of assignments which have given him experience in evaluating Soviet developments. He came in contact with the Soviets when his battalion was stationed in Berlin in 1946; a year later, while assigned to the EUCOM Historical Division, he supervised the writing of battle reports by German generals in charge of the 1941-45 operations on the Eastern Front; he attended the Strategic Intelligence School in 1950 and taught Soviet tactics at The Infantry School from 1953 to 1955. Col Mataxis was executive officer and commander of the 17th Infantry Regiment in Korea. He was assigned to the Tactical Department, TIS, from 1953 until July of last year, when he was named Chief, Publications and Visual Aids Office.

QUARTERLY QUIZ

Answer the following questions to determine whether you are a bolo, recruit, marksman, sharpshooter or expert. Each question is worth 10 points.

1. At what level of command may the following types of minefields be authorized: protective, defensive, barrier, nuisance and phony?

2. What personnel, if any, are assigned as crew members for the .50-caliber machineguns in the Infantry regiment?

3. The operator who practices radio-transmission security should use (select one):

   a. high power at all times.
   b. the most efficient antenna.
   c. low power at all times.
   d. the least power necessary to maintain good communication.

4. In a combat operation supported by Army aviation, who is responsible for the conduct of the air movement?

5. The Army's newest logistical-support vehicle is the full-track, amphibious cargo carrier M-76. This vehicle is ideal for operations in the arctic, swamp or jungle because it has a ground pressure per square inch of only (select one):

   a. 1.75 pounds.
   b. 2.08 pounds.
   c. 3.50 pounds.
   d. 5.09 pounds.

6. How can you use arm and hand signals at night?

7. When evading behind enemy lines, are you permitted to make yourself less conspicuous by removing insignia and other distinguishing marks from your uniform?

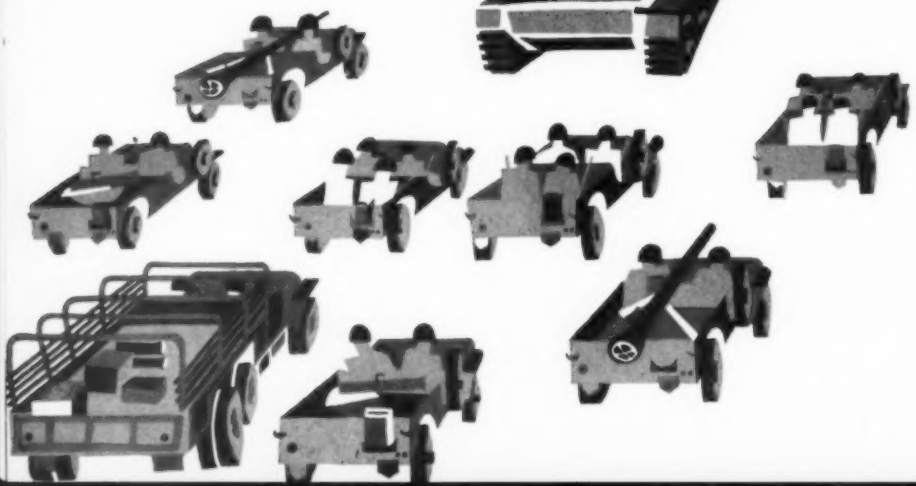
8. The Infantry division has 10 reconnaissance helicopters assigned. How many are organic to each Infantry regiment?

9. In organizing and conducting an effective defense in an atomic conflict, what can a defender do to reduce the probability of receiving heavy casualties from each enemy atomic weapon expended?

10. What form of maneuver will be used more frequently with atomic-weapons support than would be possible without that support? Why?

(For answers turn to page 86.)

By Capt August J. Dielens, Jr.



SMALL UNIT TASK FORCES

Small, combined-arms task forces will be essential and routine elements of our tactics on the battlefield of the future. We must be ready and able to use them.

Our mobile concepts for future combat require great flexibility and strong leadership. We must be able, on short notice, to break conventional units into smaller, semi-independent, mobile task forces and to unite them again just as quickly for massed effort. These capabilities have been emphasized by General Willard G. Wyman, Commanding General, CONARC, who urges that we "get going on new combinations for combat."[1] *The Infantry School is now teaching platoon, company and battalion-size task forces. In the October 1956 issue of the* Quarterly *Capt Thomas H. Jones and Capt Aaron C. Adkins introduced a series of three articles on small-unit task forces with a discussion of the platoon-size force. In this article Capt Dielens discusses the company-size task force. The battalion-size force will follow in the April issue.*
—Editor.

The destructive power of nuclear weapons demands greater dispersion if we are to continue to "live" on the battlefield. In spite of ever-present requirements for the massing of troops, particularly in offensive operations, we are not unfamiliar with the opposing necessity of dispersion. Each major increase in the destructiveness of weapons has extended our combat formations.

Less than 100 years ago we fought with units closely massed. At Spottsylvania in the Civil War 15,000 Federal troops attacked on a 900-yard front against muskets and single-shot rifles. Then the machinegun made such concentrations suicide. During World War I the density of troops was somewhat reduced. When the IX British Corps attacked Messines Ridge each division had a frontage of 2000 yards. Armor, better automatic weapons and aerial bombardment rendered these "increased" frontages unthinkable in World War II. For the concentrated attack at St. Lo U.S. Infantry divisions were given "narrow" frontages of 4000 yards.

The nuclear battlefield will require dispersion far greater than that employed in the past. Our mobile concepts call for battalions to conduct sustained, semi-independent operations. Such operations may extend even to company and platoon level. Under these conditions the use of

[1] *Army*, July 1956.

CAPT AUGUST J. DIELENS, JR., enlisted in the Army Air Corps in 1944. Two years later he entered the United States Military Academy and was commissioned upon graduation in 1950. In Korea he fought as a platoon leader with the 1st Cavalry Division until he was wounded. Returning to this country, Capt Dielens was assistant football coach at West Point. He then completed the associate company officer course at The Infantry School and remained at Fort Benning as a company commander in the 1st OC Regiment. In 1953 he became aide-de-camp to the commanding general, Allied Land Forces, Southeastern Europe, and then served consecutively in the Operations and Training Branch, as aide-de-camp to the chief of staff, as U.S. detachment commander for a year. In September of last year, Capt Dielens began his present assignment as an instructor in the Tactical Department, TIS.

motorized or helicopterborne task forces for reconnaissance, security and even limited attack and defense missions can be expected to become routine. We must be able to form such task forces quickly, on the spot, from conventional units immediately available.

The first article in this series[2] presented some of the general characteristics and principles of task forces. Before we discuss the company-size force we should review briefly a few of these basic considerations.

A task force is a temporary, tailor-made grouping of units under one commander to accomplish a specific mission for which a TOE unit is unsuitable.

Task forces—even more so than the larger TOE units from which they are formed—must have speed, mobility, flexibility, excellent communications and firepower. Commanders will have to show more initiative and ingenuity than ever before. They will have increased responsibilities. Company-grade officers will frequently command combined-arms teams. They may receive only brief fragmentary orders for a task-force mission.

To recommend intelligently what is needed for the accomplishment of a given mission the task-force commander must understand the following factors which influence the organization of such a force:

Mission. Adequate direct and indirect fire support, an adequate maneuver element, appropriate command and control personnel must be included to insure accomplishment of the mission. *Efficient* accomplishment of the mission—by use of the minimum necessary force—will reduce logistical requirements and increase both control and rapid movement.

Terrain. The type of ground over which the task force must move will influence the number and types of vehicles, the ratio of men to weapons and the types of weapons, units and equipment to be included in the task force.

Enemy. The enemy's strength, weapons, mobility and other factors will affect the composition of the task force.

Span of control. Higher commanders must avoid placing an unmanageable number of units under the task-force commander.

Communications. The task force must have adequate communications. If not organic to elements of the force, proper communications equipment must be provided by a higher headquarters.

Tactical integrity. The task force must be so organized that units retain maximum tactical integrity commensurate with other organizational factors.

Forces available. The composition of the task force will depend upon the forces available for it.

Mobility. The task force must be able to move. Weapons, equipment and vehicles assigned to a task force must be considered in light of their effect on mobility.

After the task force is organized vari-

[2] "Small Unit Task Forces," *Infantry School Quarterly*, October 1956.

ous factors must be considered in formulating a loading plan and order of march:

Order of expected use. Elements should be placed front to rear in the column according to the sequence in which the commander expects to use them and to facilitate necessary reorganization for various situations the force is expected to encounter.

Control. The commander must be able to get a desired action from subordinate units or individuals in a minimum amount of time.

Security. Measures must be taken to prevent the task force from being surprised and to enable it to meet any enemy threat which may occur.

Tactical integrity. Elements of the same unit should be kept together, if possible.

When organizing a task force, the advantages of centralized and decentralized control are weighed; balanced combined-arms groups for particular situations are determined. Decentralized control permits each element receiving attachments to be more independent and self-sufficient; however, decentralization reduces the force commander's flexibility and ability to influence the action quickly and decisively. Centralized control permits maximum effort at the critical place (this might be massed fires, an antitank, engineer or other effort), while excessive decentralization fritters away such support.

Ideally, a task force is organized in an assembly area and attachments are made far enough in advance to insure coordination and to avoid unnecessary delays. A provisional organization is established for elements to be left behind and an officer is placed in charge.

Each task force carries necessary rations; full tanks of gasoline and gas cans for wheeled vehicles, full gas tanks plus a reserve for tracked vehicles; and basic loads of ammunition plus additional ammunition required. Since missions for small forces are usually of brief duration, the force will generally carry with it the supplies to complete the mission. Such supplies are estimated carefully to insure that adequate but no unnecessary amounts are carried. Because of possible changes in the situation or mission, prior arrangements for resupply are necessary. Maximum use of aerial logistical support should be considered.

Techniques for employing the various types of task forces vary depending upon their organization and equipment; however, the fundamentals of offensive and defensive action and retrograde movements apply to task forces as they do to TOE units.

Units providing personnel and equipment to form a task force decrease their own capabilities. This must be kept in mind when forming task forces and when assigning missions to units from which task forces have been formed.

The commander keeps his mission uppermost in his mind and resists tempting opportunities for making raids against enemy troops or installations unless such raids will contribute directly to the accomplishment of his mission.

The enemy is often capable of concentrating a larger force at the objective area. To offset this, the task-force commander employs his force aggressively to achieve surprise and takes calculated risks to secure the objective before the enemy can react effectively.

Standard Infantry units must have training in combined-arms task-force operations. This training must encourage progressive thinking, and develop in all units increased capabilities for speed, better communications and more difficult logistical problems. It must accustom unit commanders to greater responsibilities.

These are the principal considerations. We must know how to apply them to a company-size task force in combat: What is this company-size task force?

Where does its equipment come from? What kind of jobs can it perform?

The company-size task force is comparable to a reinforced rifle company, with these important differences: it can shoot harder, move faster and communicate farther than its TOE counterpart. The task force has more-powerful attached weapons, is completely motorized or air-transportable and uses longer range radios. The organization of any company-size task force will include four basic elements: headquarters, maneuver, direct fire support and indirect fire support.

The reinforced Infantry battalion is the main source of a company-size task force. It is possible that more than one company-size force could be formed from a reinforced battalion. In certain situations the regiment may be the source of this combined-arms force.

The battalion or regimental commander when assigning the company-task-force commander a mission will make available to him certain elements from the battalion or regiment. The task-force commander must determine what he needs to accomplish the mission and organize the task force accordingly.

Let us consider some of the shoot-move-communicate elements which a company-task-force commander may use to accomplish his mission.

Since he usually will be one of the battalion's rifle company commanders he can initially consider his rifle platoons for maneuver elements. The 57mm rifle section will provide a portable direct-fire-support element effective against enemy automatic and crew-served weapons, groups of personnel, pillboxes, emplacements and vehicles. The 60mm mortar section may be a source of indirect fire support.

At reinforced-battalion level there are many fire-support weapons which the commander of a company-size task force can consider. He may request 106mm rifles, tanks, machineguns, quad 50s or twin 40s for direct fire support. For indirect fire support he will consider 81mm mortars, 4.2-inch mortars or M-52 105-mm self-propelled howitzers. Weapons not organic or attached to the battalion can be requested from higher headquarters.

It is quite likely that the task-force commander will be authorized to request atomic weapons to support his operation.

Depending upon his mission, the terrain and enemy capabilities, he will consider trucks, tanks, armored-Infantry vehicles with river-crossing characteristics and fixed-wing or rotary-wing army aircraft to move the maneuver element for an assault or vertical envelopment.

Motorization normally is provided by the headquarters two echelons higher than the task unit being formed: for example, regiment normally provides the necessary additional transportation required to move a company-size force. Higher headquarters may augment this transport when required.

Communication requirements vary with each mission according to the distance over which the task force will operate. The commander must consider communications within the task force, with higher headquarters and with adjacent units. The AN/PRC 10 radios from the rifle company and headquarters company may be used for the net within the task force since individual elements seldom will be more than five miles from each other. However, the self-contained company task force may well operate more than five miles from the parent unit and adjacent units. When it does, it must have more-powerful radio sets. Part of the solution to this communication problem lies in the radio sets organic to elements making up the task force: tanks, units of the AAA automatic weapons battalion, artillery, combat engineers.

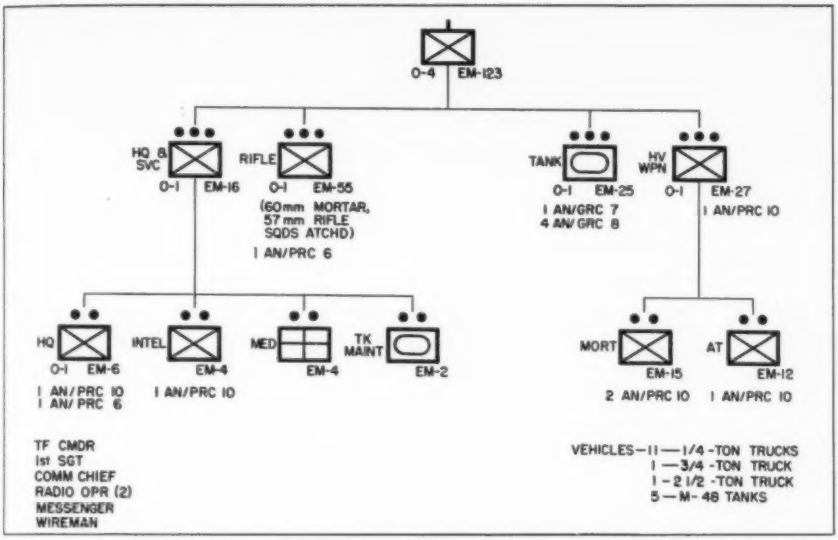


Figure 1. Mobile Force Type B (company-size).

The task-force commander considers the use of combat engineers who can assist in the breaching of barriers; installation of roadblocks, minefields and wire; and the preparation of shelters once the objective is seized. Engineers also can help with surveillance or transportation if needed.

Before we talk about the missions which may be assigned a company task force, look at Figure 1, the Type B (company-size) mobile force.[3] This serves as a point of departure for company-size task forces, particularly with respect to communication, transportation and weapons requirements. However, don't let your thinking be strait-jacketed by the Type B force. It is only a guide for the formation of a company-size task force. Remember that each task force is tailored to accomplish a *particular* mission.

The company-size task force can be assigned any mission previously or normally given to a reinforced rifle company. With its increased fire, movement and communications capabilities, and particularly in conjunction with atomic fire support, it could at times be assigned missions which might now be executed by the Infantry battalion.

These missions include support of advance guard or advance guard for a regiment; flank or rear guard of a larger force (regiment or higher), reconnaissance forward of the battle position; seizing and defending critical terrain; functioning as a delaying force or as part of the general outpost. The company-size task force can be used effectively in exploitation or pursuit.

A company-size task force could establish all or part of the combat outpost for the regiment—a job which previously called for a company forward of each front-line battalion.

Now that we have had a look at the company-size task force let's consider a specific situation in which such a force

[3]The Type B force is discussed by General Wyman in *Army*, July 1956, and is included in CONARC Training Memorandum Number 13, 4 June 1956, "Organization and Training for Mobile Task Force Type Operations" (RCS ATTNG—288).

might be used. Visualize a reinforced battalion moving to contact. Intelligence reveals that in the battalion's zone of action there is a lucrative target for an atomic burst followed by immediate exploitation. Exploitation of this target is an ideal mission for a company-size force.

Imagine you are a rifle company commander. If you were given this mission, how would you accomplish it? As you read the situation consider the factors upon which you will base your request for attachments.

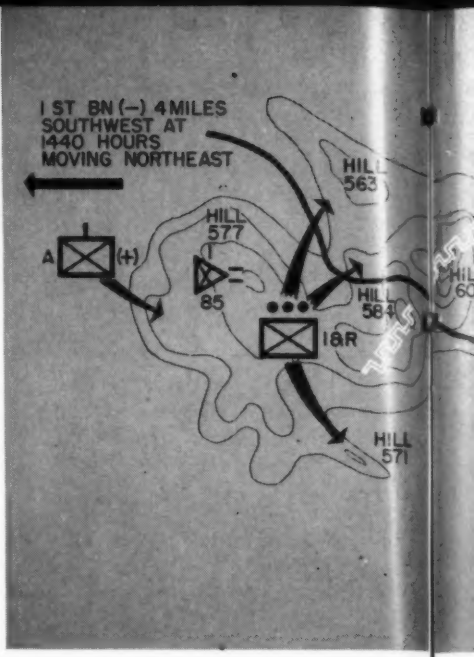
The 85th Regimental Combat Team is moving northeast to contact. All elements have completed three weeks of intensive training in an overseas staging area but have not been in action. Training has included the organization and employment of small, combined-arms task forces. The RCT is at full strength and has all authorized equipment.

Friendly and enemy aircraft have been active. Either side can gain local air superiority at any time. Both sides have used atomic weapons tactically and can deliver such weapons in this area by both air and ground means.

According to the 10th Infantry Division intelligence estimate, there is good cross-country trafficability for wheeled and tracked vehicles, in spite of recent rains. The woods in the area are sparse but offer fair concealment. Trails and fire breaks through the woods give tracked and wheeled vehicles passage in many places not shown on the map.

The 1st Battalion, 85th RCT, is organized as a battalion combat team. It has been reinforced with: two platoons from the regimental tank company; a platoon from the heavy mortar company; the intelligence and reconnaissance platoon; a platoon from the division AAA battalion (this platoon consists of four sections, each having one twin 40mm gun and one quad 50 machinegun).

The 1st BCT has been ordered to



Lauterhofen and is now advancing generally along Highway 2 (Figure 2). Other elements of the RCT are moving northeast on another axis five miles to the south. Contact between these two forces is being maintained by elements of the 2d BCT. There are no friendly ground forces within 10 miles of the regiment.

As shown in Figure 2 the I&R platoon is in front of the 1st BCT. At 1430 hours one squad of this platoon is stopped by machinegun fire from Hills 584 and 601. Company A, with the 1st platoon of the tank company attached, has reached the western slope of Hill 577. The remainder of the BCT is about four miles to the southwest of Company A and is moving northeast. Lieutenant Colonel, 1st BCT, arrives on Hill 577 at 1440 hours to talk with Captain, Company A, and Lieutenant, I&R platoon. Within the past 10 minutes Lieutenant Colonel, 1st BCT, has received the following mes-

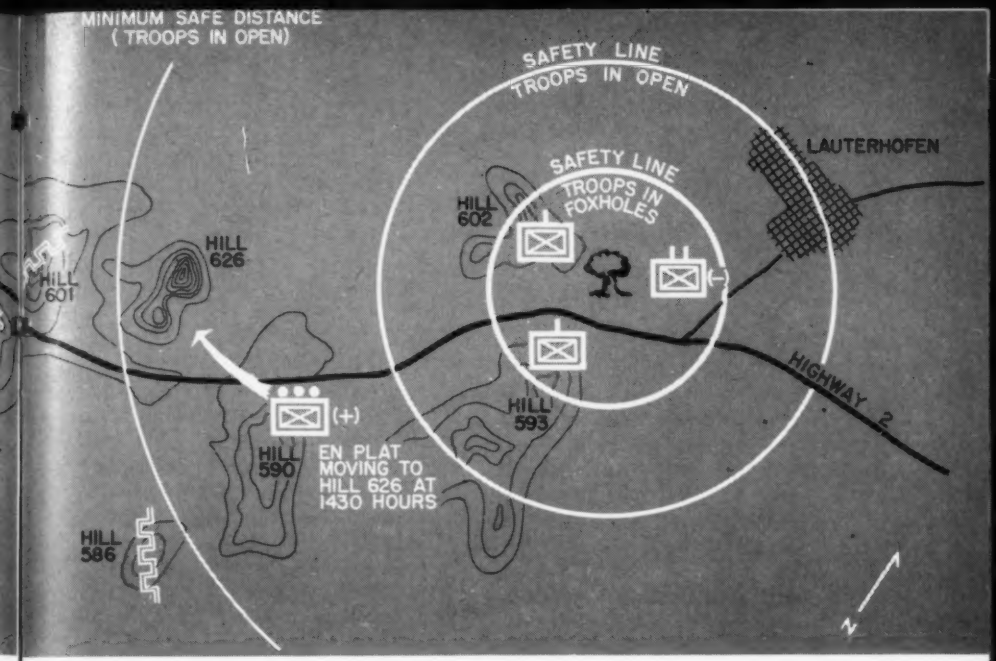


Figure 2.

sage from an observer in an aircraft of the 85th RCT's aviation section:

"An enemy force, estimated to be a reinforced rifle battalion, is now just west of Lauterhofen. I can see several tanks and self-propelled guns. About two companies of this force are arriving on Hills 602 and 593; they are preparing defensive positions.

"Riflemen—estimated to be a platoon —have just been observed one mile east of Hill 626 and apparently are moving to that hill. I can't see anything on Hills 584 and 601—the hills from which you said the I&R platoon received fire. There are no tanks down there and I don't believe there could be more than one or two squads on these two hills."

Lieutenant Colonel, 1st BCT, contacted Colonel, 85th RCT, by radio and requested that an atomic artillery shell be detonated over the Lauterhofen area. At 1445 hours, Lieutenant Colonel, 1st BCT, learned that a 20-kiloton weapon would be detonated at 1520 hours (A-hour).

After receiving this information, Lieutenant Colonel, 1st BCT, completed his plan. He told Captain, Company A:

"I am going to give you some additional attachments to form a task force which we will designate Task Force Alfa. I want this force, which you will command, to attack at 1515 hours to clear the enemy from Hills 584, 601, 625 and 602. You will then seize and defend Hill 593. From Hill 593 stop enemy movement on Highway 2 about 700 yards east of the hill. Cover the movement of the BCT along Highway 2 to Lauterhofen. Do not allow any of your attacking elements to proceed beyond Hill 601 until after A-hour. I plan to start the BCT (—) forward from here about the time your force reaches Hill 626.

"Any elements of your company that cannot be completely motorized will be left in their present location under the

control of one of your officers. These elements will come forward under battalion control and will join you on your objective, Hill 593, later this afternoon."

Basing your decisions on the principles discussed above, what attachments would you request for the organization of your task force? Captain, Company A, planned to accomplish his mission this way:

He requested the two tank platoons, the I&R platoon, the battalion's 81mm mortar platoon, the AAA automatic weapons platoon, a medical detachment of four enlisted men (in addition to the medical personnel now with his company) and two litter jeeps for Task Force Alfa. He planned to take two rifle platoons, his executive officer and a command group from Company A and to leave the remaining elements of his company in their present location, under the command of his weapons platoon leader.

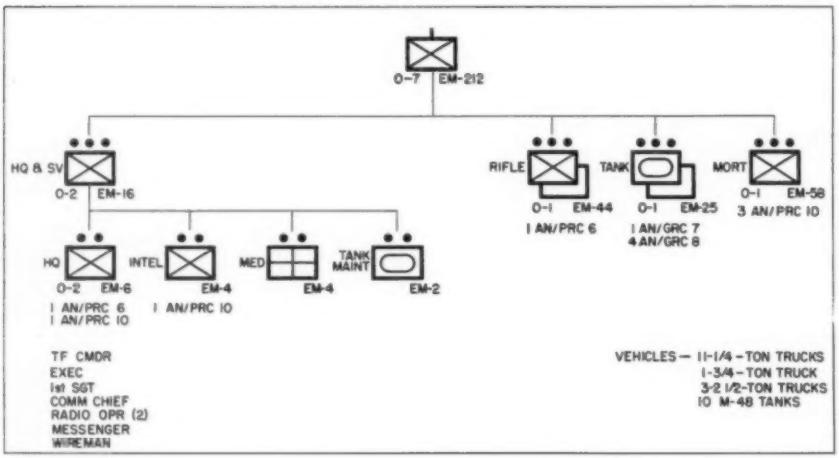
Lieutenant Colonel, 1st BCT, chose to retain the I&R platoon and the AAA automatic weapons platoon under BCT control. He informed Captain, Company A, that the automatic weapons platoon would support the task force's attack by fire through the seizure of Hill 62(. After that the platoon would move forward with the BCT (—). He granted the captain's other requests.

Now let's take a look at some of the considerations given to the composition of this task force (Figure 3).

Attached tank platoons should be used to the maximum. Generally they are attached to attacking rifle companies. Task Force Alfa initially was the only attacking element of the BCT and, consequently, attachment of both tank platoons to the force permitted maximum use of their firepower, speed, mobility, shock action and armor protection. To capitalize on the effects of the atomic explosion, an effort should be made to move friendly forces forward as quickly as possible. The tank platoons were the most suitable units available to the BCT commander for this purpose.

The task force's two rifle platoons were able to ride on the 10 attached tanks. Infantry cannot be placed on tanks leading the formation when contact with the enemy is imminent; however, the two rifle platoons in this situation could be transported by the tanks with more cross-

Figure 3. Task Force Alfa.



country mobility and no more vulnerability than by truck. Two rifle platoons provided adequate rifle strength for this force. More riflemen could not have been moved with ease upon the available tanks.

Had armored Infantry vehicles (M-59s) been immediately available they could have been used in this situation. When time permits, the task-force commander can request these vehicles from higher headquarters.

The 81mm mortar platoon was included in the task force because it was making the BCT's initial effort and would be separated from other elements of the battalion by more than its effective range. The BCT included one 4.2-inch mortar platoon and, therefore, was still able to provide indirect fire support for other elements of the BCT if they were committed.

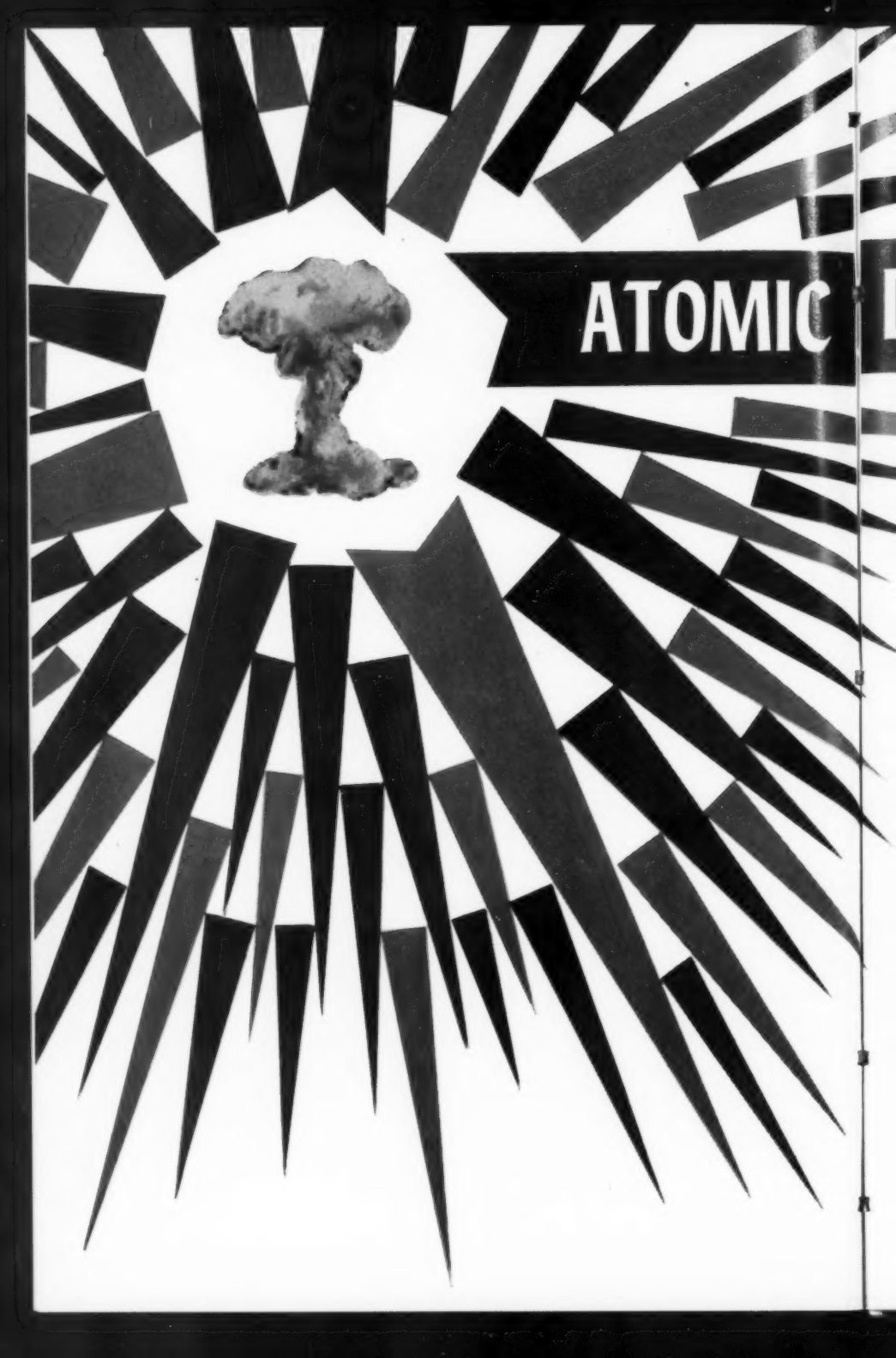
Elements of the machinegun and antitank platoons of the battalion heavy weapons company were not included since the tanks gave the force adequate direct fire capability. Elements not essential to the mission were not desired.

Elements of Company A's weapons platoon were not considered necessary because of the fire capability of the tanks and 81mm mortars. A 60mm mortar squad and 57mm rifle squad could have been attached to each rifle platoon, if Captain, Company A, had felt that his rifle platoons might be separated from his tanks and that 81mm mortar fire would not be immediately available to them. Because of the method in which he planned to employ the platoons of Task Force Alfa he decided not to increase the logistical requirements of his force by taking 57mm rifles and 60mm mortars.

Radios organic to the various elements were used for Task Force Alfa's command net. Better communication will be assured if a task force is provided with two additional AN/PRC 10s (utility sets from the battalion headquarters company) along with authority to use this type of radio for the command net. An additional frequency for such a net will be requested from the RCT communications officer through the battalion communications officer. If this is refused the frequency previously authorized for the rifle company command net will be used. Captain, Company A, realized he would probably be less than five miles from the battalion commander at all times and that they would be able to communicate over the AN/PRC 10 radios of the battalion command net. The tank platoon leaders' AN/GRC 7 radios could have been used as an alternate means of contacting Lieutenant Colonel, 1st BCT.

Although the purpose of this situation was to show you the various factors to be considered in organizing a task force —and not to provide a step-by-step solution of a tactical problem—here,briefly, is how Captain, Company A, accomplished his mission. Because of the small number of enemy troops reported on Hills 584 and 601 he decided to split his force and attack both hills simultaneously. He sent a team made up of a tank platoon and a rifle platoon against each hill. When the enemy had been driven off both hills the force reunited for the assault on Hill 626. The task force remained together to clear the enemy from Hill 602. It then seized Hill 593 and set up positions from which it could stop enemy movement along Highway 2.

A task force as carefully organized as this one could be expected to accomplish any mission within its capabilities. Task forces will play an important role in any future war. They are not new—task forces were used during World War II and the Korean conflict. But current training emphasis on such forces is new. Infantry leaders will be expected to know how to form task forces, how to fight with them, how to win with them.


ATOMIC

Linear defensive positions in great depth, with dispersion at all echelons consistent with the mission, is the answer to defense on the atomic battlefield.

DEFENSE RECONSIDERED

In recent issues we have published Infantry School concepts for the employment of Infantry in the offense and defense on an atomic battlefield. Here is another concept for defense against atomic weapons. The thoughts expressed are those of the author and do not necessarily reflect official thought of The Infantry School. This concept is published in the interest of stimulating additional thinking on this important subject.

—Editor

New or radically improved combat weapons are to be expected. Throughout military history there has been a continuous evolution of increasingly destructive tools for war. Yet, major innovations have always brought initial confusion and dismay to those who have had to face them. Every new weapon from the crossbow to the atomic bomb has engendered temporary feelings of futility. But, invariably, means have been found to combat each new instrument of destruction, and tactical concepts have been modified or developed by opposing forces to employ them.

We are now approaching this phase with nuclear weapons. The United States, Great Britain and Soviet Russia possess mass-destruction weapons. Other industrially advanced countries will be able to develop and manufacture them. Both sides in any future conflict will possess a variety of atomic weapons and the means to employ them.

We are familiar with initial reactions to the atomic bomb. Claims were made that no longer was there a necessity for ground combat. It was felt that a few nuclear blasts could destroy all ground forces—that a decision in a future war could be won by strategic air bombing or guided missiles with atomic warheads. This reaction is now giving way to the realization that an atomic bomb is not an absolute weapon. Even within areas most heavily affected by the nuclear bomb there will be survivors, and a defender can do many things to increase his protection against it. The size of atomic

By Lt Col Seymour L. Goldberg

weapons for use on the battlefield cannot be increased indefinitely. There is a limit beyond which they cannot be adequately controlled. It is clear that ground warfare will continue and that tactics can and must be developed to utilize this powerful innovation.

A weapon as novel and radical as the nuclear explosion has a tendency, at least initially, to inspire tactics as novel and radical as the weapon itself. There has been a search for something new and different on the theory that only new and different tactics could counter this tremendous force. At the same time there have been concurrent attempts to make the atomic weapon conform to past tactics.In the defense, which this article will consider, we note that certain concepts have opened 6 to 9-mile gaps between units, destroying mutual support and creating possibilities for the defeat of units in detail. Another concept which disregards the capabilities of atomic weapons is the idea of strongpoints to be held, like conventional defensive positions, to canalize the enemy or deny him specific areas. Besides presenting excellent atomic targets, such strongpoints fail to canalize the enemy—a job which can be done only by a continuous barrier of troops or obstacles against which the enemy must concentrate to get through.

In developing defensive tactics for atomic warfare, we should first analyze those properties of the atomic weapon which possess new or more powerful military effects. A nuclear blast produces casualties through the new military effects of heat and radiation and from a more powerful blast than any previous weapon. These effects should receive appropriate consideration in our planning, but we must not disregard the principles of war. Nor should we abandon without good reason concepts which have proved sound or attempt, in combating one effect, to make ourselves more vulnerable either to other effects or other forms of attack.

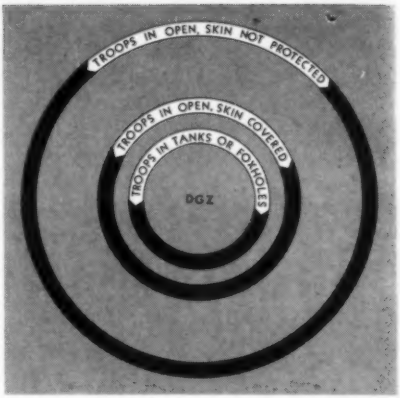


Figure 1. Radii of effects based on R50 line.

The damage caused by an atomic weapon is expressed as a "radius of effects." The radius of effects, however, has no real meaning unless it is related to the nature of the target being attacked. The circles in Figure 1 show the radius of effects to be expected from a 20KT[1], low-air-burst weapon among troops with varying degrees of protection. From the smallest to the largest circle they show radii of effects against troops in tanks or foxholes, troops in the open but with no skin exposed and troops in the open with skin exposed.

We cannot use these circles unless we understand what they represent. Since the purpose of the radius-of-effects circle is usually to show a target area within which troops will be rendered combat ineffective, the radius generally used is the so-called R50 line. At the R50 line 50% of the personnel *probably* will become casualties. Each radius of effects shown in Figure 1 is based on an R50 line. As you go toward ground zero, you expect to get increasingly heavier casualties until in the area around ground zero you would expect 100% casualties. Therefore *within* the circle described by the R50 line, upwards of 50% of the troops

[1]KT stands for kiloton, the explosive equivalent of 1000 tons of TNT.

could be expected to become casualties.

Of course, there are going to be casualties beyond the R50 radius-of-effects line. These casualties will occur in decreasing percentages. Beyond the R50 line there will be general lines at which you may expect 30%, 20%, 10%, 5% and, finally, 0 casualties. Beyond the zero line—at distances determined by a factor allowing for error in delivery means—friendly troops in foxholes should be safe.

Casualty producers from atomic weapons are radiation, blast and heat (thermal). While our radius-of-effects line consolidates the results from all casualty producers, we should look at each of them separately. Heat is most effective against troops in the open. Its effects cover the widest area, but are the easiest to protect against.

Blast effects are probably the most difficult to avoid; for those who have not had time to protect themselves, except against thermal effects, the blast factor would probably be the greatest cause of casualties.

Nuclear radiation of concern to tactical commanders can be divided into two general types: prompt and residual.

Prompt radiation is emitted from the burst at the time of detonation and lasts about 60 seconds. Personnel receiving enough of such radiation will become casualties in anywhere from a few minutes to a few days. The amount of prompt radiation received can be considerably reduced by proper shielding: for example, a foxhole can cut down the amount received by 90%.

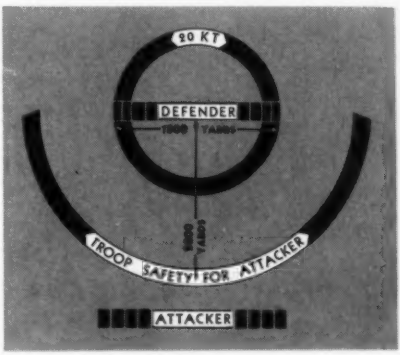
The residual radiation from a nuclear blast is of two kinds:

Induced radiation makes the ground under the burst radioactive. A certain amount of this radioactivity may remain for long periods. However, because the area affected is relatively small, protected troops who move quickly through the area will not suffer casualties. Troops on foot must avoid the higher radiation levels at the center of the contaminated area when passing through.

Radioactive fallout contamination is caused by radioactive particles from a blast falling on an area. Militarily significant fallout is produced by the air burst of a megaton[2] weapon or by the surface or subsurface burst of any size weapon. Fallout should not cause casualties to personnel shielded from the dust. Defending personnel in prepared positions should suffer few casualties from fallout, but it will make a defender comparatively immobile. An attacker would be more subject to casualties from fallout because he must be in the open. Because fallout effects are so difficult to predict, it will usually be disadvantageous to employ fallout-producing weapons tactically, although they may have advantages when used strategically.

In most discussions about atomic weapons we usually notice reference to the 20KT weapon. The 20KT is used as a basis only; therefore, any tactical concepts based *solely* on the 20KT are misleading. We should realize that as we increase the size of the weapon we do not get a proportionately increased blast effect against targets on the ground. Let us look at a defender disposed in an 1800-yard line of foxholes (Figure 2). One

Figure 2. Effect of a 20KT weapon on a 1800-yard line of foxholes.



[2]A megaton (abbreviation MT) has the explosive force of 1,000,000 tons of TNT.

20KT weapon should destroy this unit. But if the defender's line is 3600 yards long, it takes a 160KT weapon (8 times as large) to do the job (Figure 3). It is important to note here that two 20KT weapons would have the same effect on this unit as the 160KT, while permitting attacking units to come closer to ground zero (troops set to exploit the burst of a 160KT weapon must be 2000 yards farther away from ground zero than for a 20KT).

Let us look at these same defending troops disposed in a 3600-yard *perimeter* instead of a line (Figure 4). A 10KT weapon will eliminate this unit as an effective organization—and the attacker can be very close to the defender before the burst.

Thus, for defending troops in contact with the enemy, a linear disposition is least vulnerable. Another important point to remember is that several smaller weapons may frequently be as effective as, and more suitable than, a larger weapon.

Take another look at the question of weapon size (Figure 5). A regiment is in a position defense in an area 4000 yards square. The commander, finding that a 400KT weapon will eliminate his regiment, organizes his battalions in perimeters and separates them within an 8000-by-8000-yard area. Noting that a four-megaton (4MT) weapon will destroy his regiment in its new position, he again separates his battalions—still in tight perimeters or "strongpoints"—

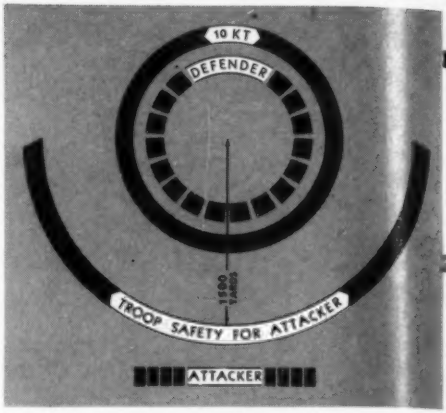
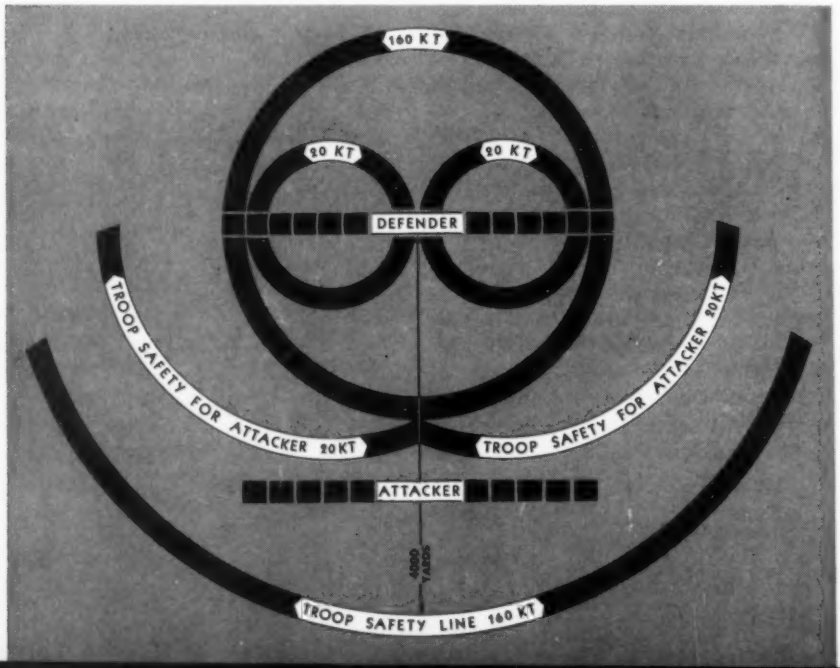


Figure 4. Effect of a 10KT weapon on a 3600-yard *perimeter*.

Figure 3. Effect of a 160KT weapon on a 3600-yard line.



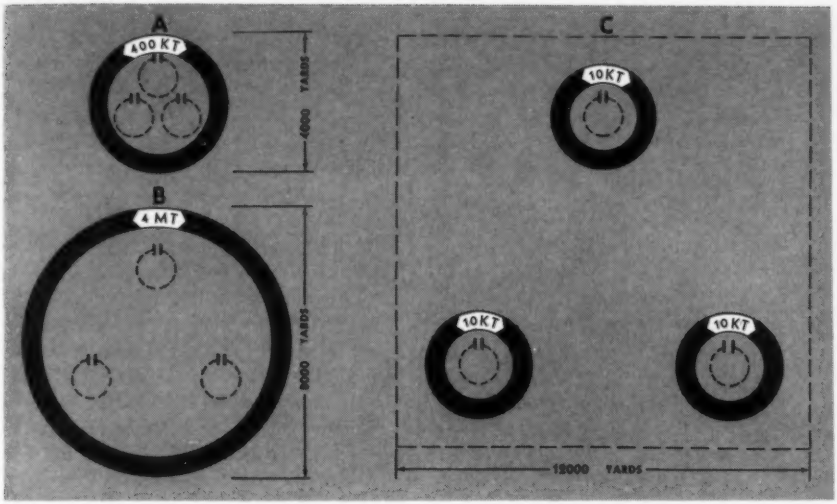


Figure 5. Increased dispersion does not always give adequate defense against a nuclear weapon.

this time in an area 12,000 by 12,000 yards square. Now the enemy comes in with three 10KT weapons—one on each battalion strongpoint—and destroys the regiment anyway. By trying to set up a foolproof defense against larger weapons, the regiment makes itself vulnerable to smaller weapons.

Other factors determining the size of weapons are induced radiation and fallout. As the size of tactical atomic weapons increases there is a probability that the area of induced radiation also increases, placing additional restrictions on the attacker. An even greater handicap to the attacker is fallout. Some fallout may be expected from any weapon. In the case of smaller weapons it can be disregarded. However, when you reach the megaton range, the fallout becomes so great and so unpredictable that an attacker probably will not use megaton weapons.[3] This is not to say that large weapons will not be used, since it is a point in their favor that they reduce the need for accurate delivery. The question of large or small weapons has no specific answer—each situation must be treated individually.

From the foregoing we have developed two important considerations for any practical defense against atomic weapons. First, if you are in contact with the enemy and he can locate your position it is best to adopt a linear formation. Second, dispersion at echelons much lower than battalion is desirable.

Solely from the standpoint of dispersion, the optimum is great dispersion between individuals—which is clearly impractical if the defensive mission is to be accomplished. To achieve dispersion we will need considerable width and depth to our position and we will plan to have only minimum necessary forces in the forward areas where they can be located by the enemy. All of these factors call for a mobile defense, a defense in which the lesser portion of the force is forward to halt or canalize the enemy while the remainder of the force is in reserve for offensive action against enemy penetra-

[3]Recent newspaper accounts of "clean" megaton weapons indicate that the amount of fallout from megaton weapons may be considerably reduced.

tions. Figure 6 shows, schematically, a defense which should answer the problems presented at division level. The division has been assigned a frontage of 30,000 yards and has been given a depth of 40,000 yards. A line of positions has been specified by the corps commander through designation of limiting points. The division commander makes an analysis of his sector and orders the construction of switch and blocking positions shown by the dashed lines. These positions will be occupied to pen the enemy into killing areas where he will be destroyed by offensive actions. Area 1 would probably be eliminated by offensive action by division. Area 2 would probably require corps assistance. Notice that these positions permit a delaying action if the enemy attack is so heavy that he should not be decisively engaged in this particular area. A river is shown on the right boundary to emphasize use of natural obstacles to protect not only the front but the flanks. In the absence of such natural obstacles, blocking and switch positions will have to be closely coordinated with adjacent commanders.

Having made his plan, the division commander organizes his sector. He assigns the forward defensive area to his 1st regiment, attaching to it an additional battalion. This regiment has the mission of defending the forward area and halting or canalizing the enemy. The depth of this regiment, 10,000 yards, is described by a rear boundary. The 2d regiment is given the mission of organizing the next portion of the position and of being responsible for the occupation and defense of blocking and switch positions within its area on order. The 3d regiment has the division tank battalion attached. It is responsible for the rear portion of the division area, including the construction therein. It also plans to act as the nucleus of the maneuvering force providing the offensive action to defeat the enemy. All battalions participating in the offensive action will be attached to the 3d regiment when such action is ordered.

How are these areas organized? The commander of the 1st regiment divides his area into four sectors, one for each battalion. He has no significant reserve, since his primary mission will be to block or canalize, depending on the situation. He can be given a reserve by the division commander who can attach one or more battalions from other regiments. The battalion areas are described by boundaries, except to the front, where limiting points are used. The forward limiting points indicate the line of security elements, which resemble combat outposts, except that they are farther forward. Their purpose is explained below. Generally, along the line of limiting points describing the position proper, the battalions are expected to organize company positions. Within their areas they also organize company positions along the switch positions specified by division. Other than that they are given consider-

LT COL SEYMOUR L. GOLDBERG, chairman of the Battalion Committee, The Infantry School's Tactical Department, received an OC commission in 1942. During the Second World War he served with the 393d Infantry Regiment, 99th Division, in Europe. He returned to this country in 1945 and became a battalion executive officer in the Infantry Replacement Training Center, Fort McClellan. A year later he was executive officer, 47th Infantry Regiment, 9th Division, in Europe and then saw duty as S1 and later assistant S3, Munich Military Post. In Korea, he was assistant G3, X U.S. Corps, and later commanded a battalion of the 32d Infantry Regiment. Lt Col Goldberg began his current tour at The Infantry School in 1953 as a tactics instructor and last year was named chairman of the Battalion Committee.

able flexibility by the regimental commander on how to organize and defend their area. The regimental commander keeps in touch with the situation to insure that units are not concentrating into atomic targets or needlessly exposing the flanks of other battalions.

The commander of the 2d regiment has organized his area like that of the first regiment except, of course, that he has only three battalions.

The 3d regiment's position is organized in much the same way. However, since the commander of this regiment has fewer units with which to cover an area as large as that covered by each of the other two regiments, he will need additional troops to properly defend his blocking positions, if directed to do so. This regiment will also require divisional assistance to prepare all the switch and blocking positions in its area. Note that none of the troops in the areas of the 2d and 3d regiments initially occupy switch or blocking positions. When they are not engaged in construction they are dispersed in small units in concealed assembly areas.

Now let us discuss the organization of a battalion—the right center one of the 1st regiment (Figure 7). This battalion's commander utilizes linear dispositions when his unit is in contact with the enemy and tries for maximum dispersion when out of contact. On reaching the security elements in the forward area, the enemy encounters a line of observation squads, and then a line of platoons. If he drives in the security elements, he comes to the line of companies (the battle position). To break through the battle position the enemy must mass troops. In other words, where the enemy encounters a line of companies he is canalized and forced to mass. A weapon as large as 150KT will eliminate only one company —and, because of troop safety factors, the enemy will find it difficult to exploit

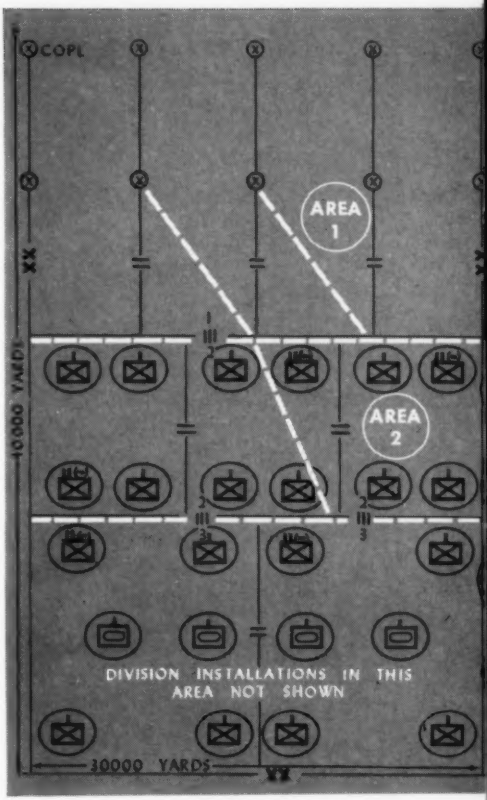


Figure 6. Linear defense at division level.

such a weapon. This is the most dispersed formation of troops which can still accomplish the mission. If the distance between companies is increased they may not be able to force the enemy to mass. The battalion commander has ordered positions prepared along the blocking position specified by division and has had positions prepared on his own for other situations which he envisions. A similar organization would be developed for all battalions, not only of the 1st regiment but also of the 2d and possibly of the 3d regiments.

Assume that the enemy has attacked and has penetrated the east portion of

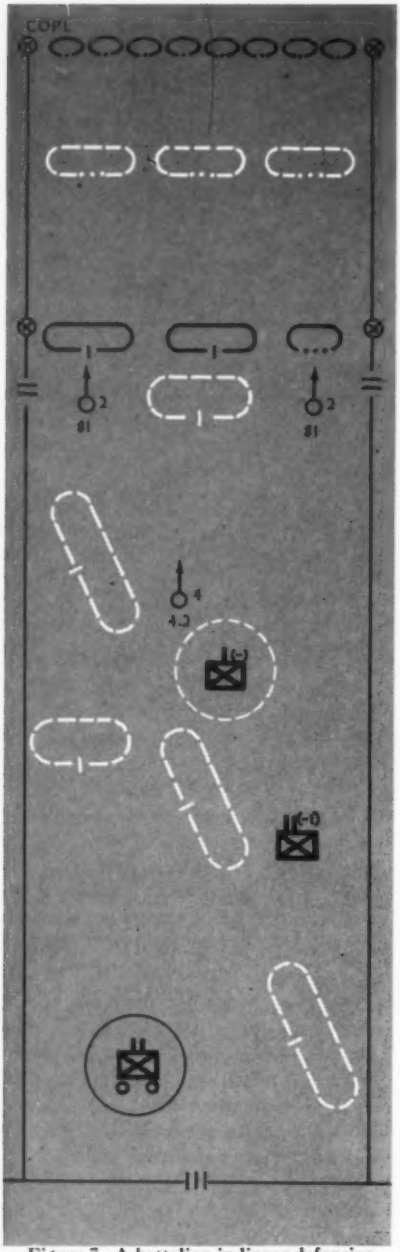


Figure 7. A battalion in linear defensive positions.

the 1st regiment's position (Figure 8). Four of the six companies of the two east battalions have been destroyed. The remaining two companies are occupying a switch position as directed by the commander of the 1st regiment. One of the 2d regiment's battalions, reinforced by one company, is ordered to occupy blocking positions to tie in with the 1st regiment's switch position. The enemy is blocked and penned against the river in Area 1 (Figure 6). The 2d regiment's other two battalions are attached to the 3d regiment which now has four Infantry battalions and a tank battalion. Supported by atomic weapons it counterattacks to destroy the penetration. If the enemy breaks out of Area 1 he can still be penned into Area 2, but in this case the counterattack must be made by corps.

This discussion has been based on the current Infantry division, although it assumes that all personnel are motorized at least in 2½-ton trucks. Armored personnel carriers and an organization which permits more flexible use of battalions will facilitate this type of defense. The above situation emphasizes the need for flexibility—the 1st regiment needs more battalions than the three organic to it, whereas the 3d regiment would probably be able to perform its mission adequately if it had one less Infantry battalion than the example. A battalion having more companies would probably also be of advantage since it would permit greater effort on the switch and blocking positions which the battalions will have to construct.

The discussion has utilized three regiments, one behind the other, to direct each regimental commander's interests towards one field; the forward commander canalizing, the second commander blocking, and the third commander counterattacking. This admittedly places communications problems on the forward regiment. If these problems become too

pressing, an acceptable solution, which would not change the battalion organization and would not change either the concept or the conduct, would be to place two regiments forward, giving each of them the responsibility for half the indicated forward regimental area and the responsibility for half the indicated 2d regimental area.

This form of defense will go a long way toward solving many of the problems which will confront a defender in atomic warfare. We can reduce the vulnerability of units to atomic weapons by adopting linear formations and dispersing units at echelons lower than the battalion. By disposing our forces in linear formation and accepting moderate gaps between platoons and companies, we reduce the necessity for major gaps between battalions, thereby facilitating and simplifying surveillance of the area and making it impractical for large enemy forces to infiltrate the position. This also results in greater protection for artillery and other supporting weapons.

At the same time we retain at least a degree of mutual support between battalion-size units so that major enemy forces attempting to bypass one battalion find it necessary to encounter another battalion or at least go through a zone of fire of that battalion. Units are not required to hold in place. This is a very important element of the concept since a defender who is immobilized by his mission becomes an excellent atomic target. Reserves are assembled in minimum-size units, concentrating when required by the situation. Under present organization, these will probably be company size. However, armored-Infantry vehicles will make it possible to reduce them to platoon-size units. Successive linear blocking and switch positions give depth to the position. A continuous barrier of natural obstacles, troops and fires canalizes the enemy.

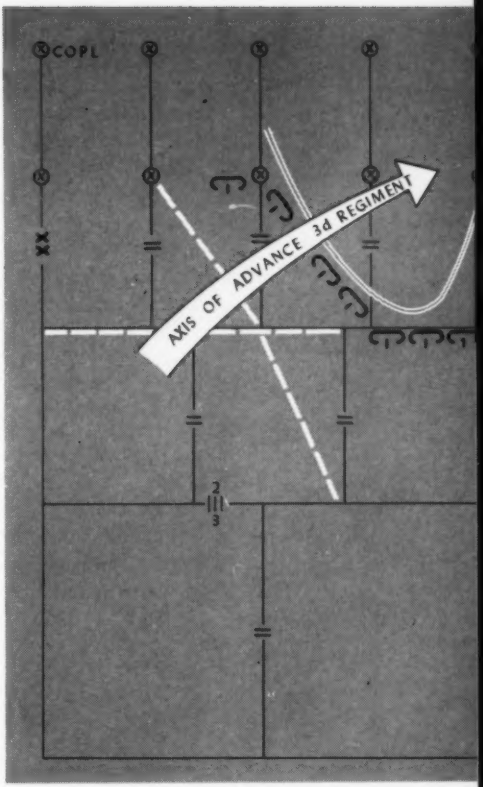
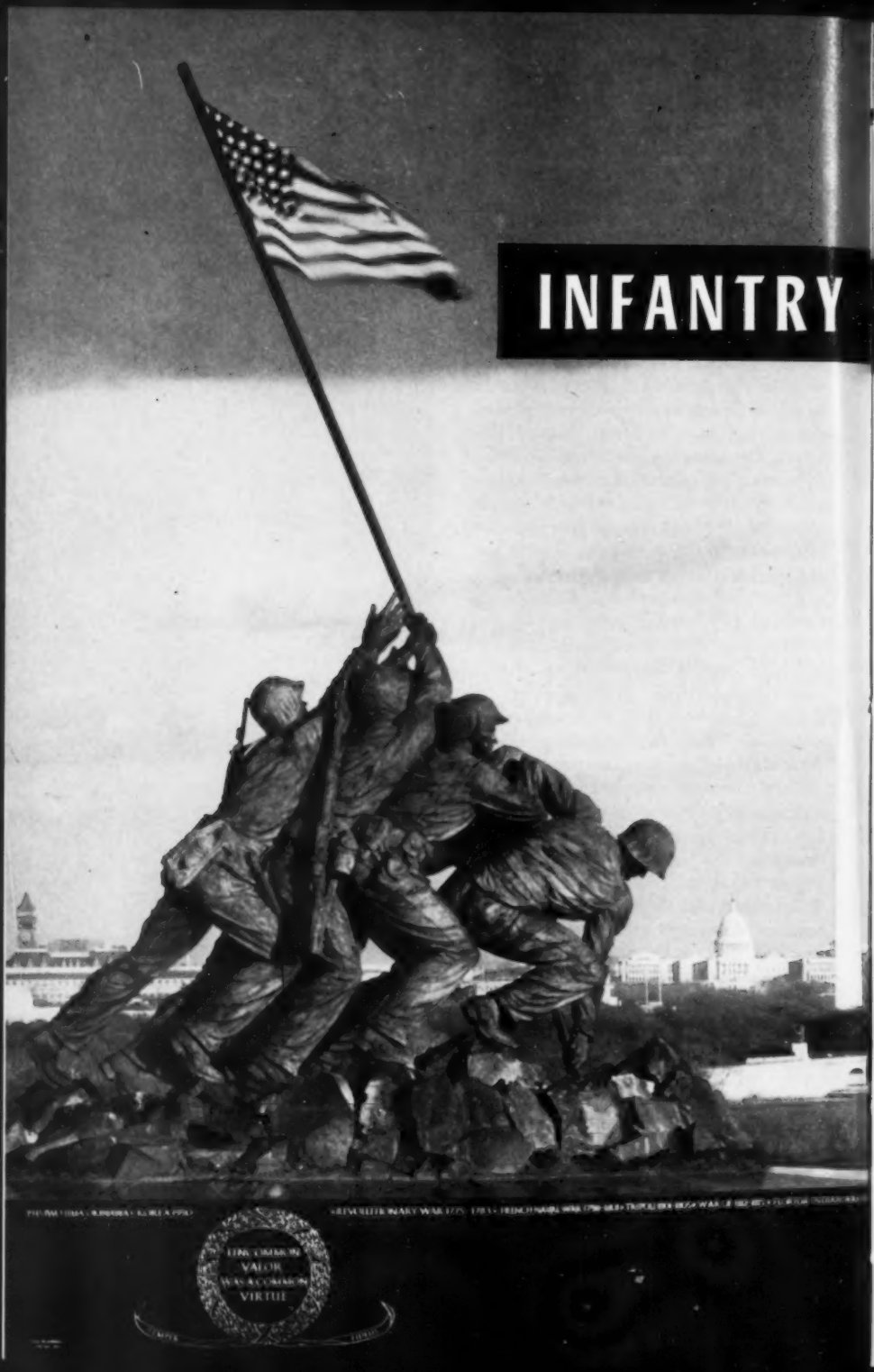


Figure 8. Conduct of linear defense.

This article has outlined one type of defensive operation which could be used on the nuclear battlefield. It is different from the concepts of the past because it is designed for the warfare of the future. Yet, it is not new solely for the sake of being new. Linear defense and dispersion take into account the capabilities and limitations of atomic weapons — which have made obsolete our concepts of strongpoints, fixed positions, reserves assembled in large units and impractical barrier plans. Only by planning for the future can the Infantry prepare itself for victory in the Atomic Age.


INFANTRY
UNCOMMON
VALOR
WAS A COMMON
VIRTUE

We should know more about our fellow Infantrymen in the Marines and about our other "Infantry School" at Quantico.

WITHOUT CROSSED RIFLES

By Lt Col Albert H. Smith, Jr.

Chances are, when you hear the word "Infantryman" you think of crossed rifles and the doughboy—backbone of the Army. When "Infantry School" is mentioned you probably visualize Fort Benning and The Infantry Center. But to a great many people Infantrymen and Infantry School have a different meaning. There are *other* Infantrymen in our armed forces — the "Leathernecks" of the Marine Corps who also seize and hold ground as foot soldiers. And there is actually another "Infantry School"—at Quantico, Virginia.

If you are an Army officer eligible for attendance at an advanced course or the Command and General Staff College you may be surprised, as I was, to find yourself on orders to this school. Depending upon the level you have reached in your military education you may be specially selected by Career Management to attend either the Marine Corps Junior or Senior School. These are counterparts of our regular advanced courses and the regular C&GSC course at Fort Leavenworth.

Also, like myself, you may have some misgivings about such an assignment, particularly if it will be in lieu of attendance at your own branch school or Leavenworth. I can assure you that you need have no such doubts. You will soon discover you have been given an exceptional privilege. We should know more about our fellow Infantrymen in the Marines and their schooling.

Less than an hour's drive south of the Pentagon along U.S. Route 1 stands a statue of those famous Marines who planted our nation's flag atop Mt. Surabachi on Iwo Jima. This splendid tribute serves a dual purpose. It reminds us of the "Uncommon Valor" of gallant Infantrymen and marks the entrance from the main highway to the Marine Corps' education center. (Another statue of this stirring scene has been placed on the banks of the Potomac in the nation's capital.)

The development of Quantico as an Infantry training area closely parallels that of Fort Benning. It started at the time of World War I when more space was vitally necessary to train rapidly expanding Marine Corps units. A suitable tract of land was selected along the Potomac River, 30 miles south of Washington, and leased early in 1917. By May the first group of Marines had arrived and were living under canvas. During the next year, the lease was replaced by

purchase. Secretary of the Navy Josephus Daniels authorized a permanent base on the site, and a hint of future development was given in the establishment of an air station. The new training area offered every physical advantage. There was room for field training, for ranges and for permanent buildings. There were facilities for rapid embarkation from a pier on the river or for rail shipping if that were necessary.

Early in the 1920s it became apparent to Maj Gen John A. Lejeune, the thirteenth Commandant of the Corps, that existing educational facilities were wholly inadequate to maintain a force in readiness. He believed that each officer and enlisted man should be offered a continuing and scientifically planned and conducted education. It was this enlightened imagination that founded the activity now known as the Marine Corps Schools. In its initial form the education program consisted of three parts: a Basic School for newly commissioned second lieutenants, a Company Officers School for captains and a Field Officers School for majors. To this framework — the basic form of which is still maintained — were added, as need for them emerged, specialized technical courses for enlisted men as well as officers.

The Basic School has a single goal — training students for duty as Infantry platoon leaders, a vital billet to the Marine Corps. It is responsible not only for the training of newly commissioned officers but also for the various officer candidate courses. Programs of instruction strive to produce enthusiastic, competent Marine officers eager to assume the responsibilities of leadership and to carry on the traditions of their predecessors. This school — and for that matter the entire educational system — emphasizes development of deep pride in being part of an organization with a tradition of military excellence dating back 181 years.

At the top of the Marine Corps educational ladder we find the Senior School, comparable to our own Command and General Staff College. Its mission is to provide professional education for colonels and lieutenant colonels in command and staff duties appropriate to the current and next higher grade. More specifically, graduates are qualified for assignment to the general staff of a Marine division or aircraft wing.

At this Senior School, the method of instruction is an informal conference of a relatively small group of students. In this so-called seminar system, groups of 10 students meet under the guidance of an instructor to discuss military problems and principles, solve requirements and examine policy and doctrine. Active discussion of each problem by every member of the class makes full use of the vast amount of experience possessed by each student, stimulates progressive ideas and maintains a high level of interest. The enthusiastic acceptance and initial success of this program may well cause it to

be adapted as a pattern for military education.

Objectives of the Junior School are similar to those of the Senior School, but are designed to equip captains and majors for their future duties.

Other resident instructional courses are presented by the Naval Gunfire, Communication Officers, Air Observers and certain technical schools.

The goal of the Marine Corps Schools is to keep the Corps, with its air-ground team, a balanced, highly trained, well-integrated fighting force in readiness. To this end both Marine aviators and ground officers compose the staff and student body, learning each other's tactics and techniques.

The program of instruction at the Senior School provides an interesting, challenging and profitable experience for an officer of any service—but especially for the Infantryman. It begins as would be expected, with the role of the Marine Corps in our national defense structure. Basically, the Corps is organized, trained and equipped to provide forces of combined arms, together with supporting air components, for service with the U.S. Fleet in the seizure or defense of advanced naval bases. Also, included in the National Security Act of 1947 is another mission pertaining to the Marine Corps: ". . . and shall perform such other duties as the President may direct." Not so long ago—you will recall—he did so order. A Marine division fought alongside our units in Korea as part of Eighth Army. This pattern of close association existed in World Wars I and II as well, and can be expected to be repeated in any future conflict especially under emergency conditions of an atomic war.

Similarity between our doctrine and

Headquarters Marine Corps Schools.

that of the Marines is undeniable. Included among reference texts for the course are a high percentage of familiar army manuals. Once established ashore, Marine Infantrymen normally adhere to our tactics and doctrine, use many of our techniques, fight with the same weapons and are guided by jointly accepted principles and fundamentals.

There are minor differences in organization and equipment between the two services. However, leaders fighting side by side in the future should be able to understand each other as well as their predecessors did in World Wars I and II and Korea.

As the course develops, emphasis is placed on advanced instruction in amphibious warfare to include the large-scale all-helicopter assault and the employment of atomic weapons. Doctrine and techniques of the Marine "vertical envelopment" are not really very different from those of the Army airborne assault taught at our schools. Although the situation and circumstances may vary, certainly we have the same objective as that recently announced by Lt Gen Twining, Schools Commandant, of being able to "strike hard at any square yard on the face of the earth."

Ashore, Marines fight as Infantrymen.

In this regard, students have a maximum opportunity of investigating all ramifications of helicopterborne mobility. Active participation by at least three seasoned aviators in every 10-man group provides for a balanced approach, keeps the Infantry out of confusing clouds and promotes tactically sound over-all solutions. Air-ground teamwork in the Marine Corps is a life and death requirement—not just a favorable situation for combat.

Getting back to fundamentals, Marine Corps Schools teach — as we do — that the advent of the atomic bomb has not eliminated the need for ground forces to seize and hold enemy territory. The Marine Corps believes that the time comes in every battle when we must close with the enemy to defeat him.

Close association, on a daily basis, with Marines brings a fuller understanding of the Corps' pride. Naturally, a small volunteer organization of some 200,000 officers and men fosters such feeling. On the other hand, there are cogent reasons for and policies which strengthen pride in the Corps.

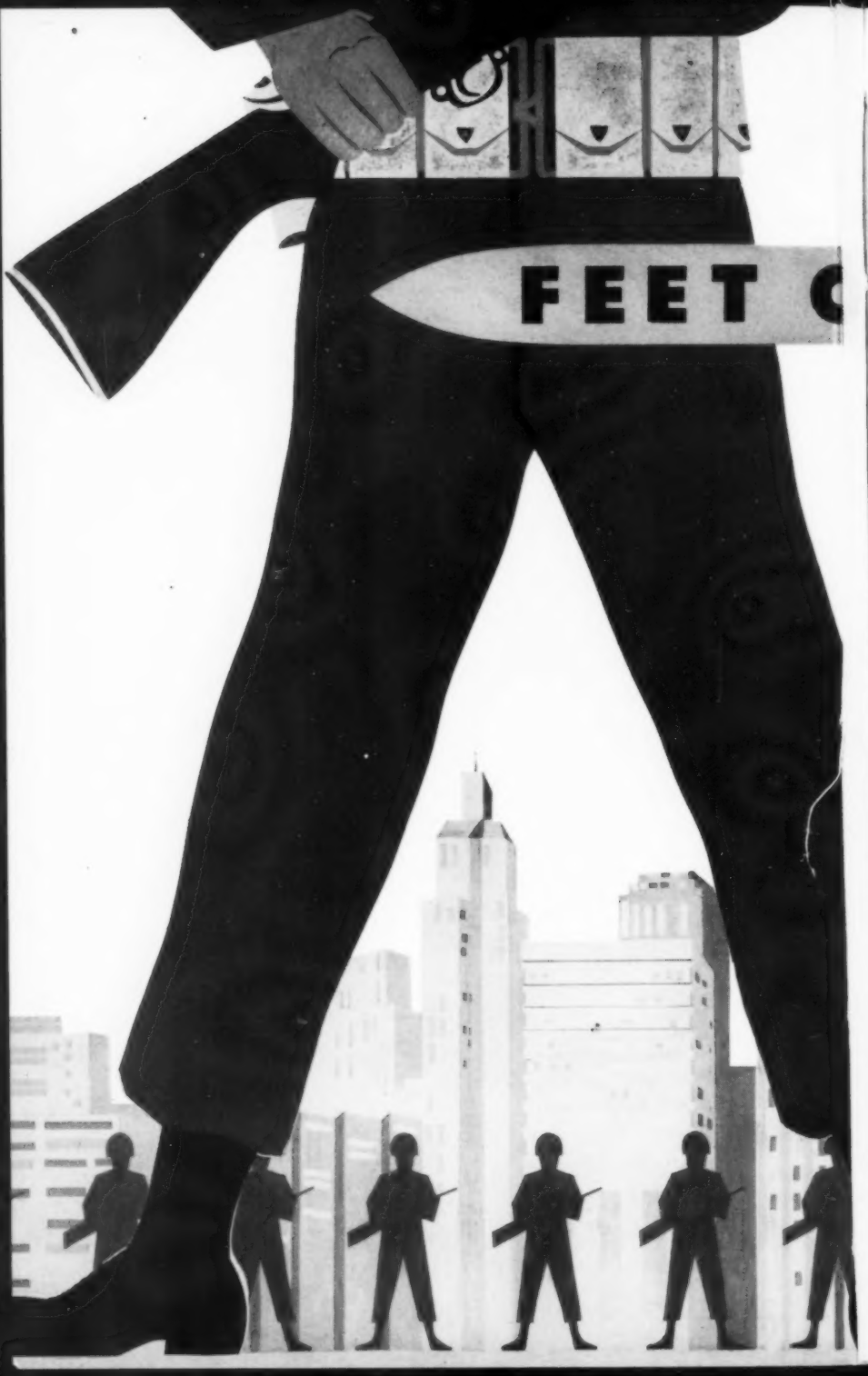
Marines stress uniform appearance. Special insignia do not foster divergent branch loyalties because there are none. The only difference in dress authorized is the wearing of wings by Marine aviators. Parachute badges are not worn. A Marine is either a ground officer or an aviator. Specialists do exist as far as

Marine Infantrymen can hit the beaches from the air.

records, MOS's and assignments are concerned. However, each and every individual is a Marine first and is so presented to the public. Unit loyalty is de-emphasized in favor of over-all loyalty to the Corps and its traditions. So as not to detract from the one Corps theme, the tactical designation of World War II, "Amphibious Corps," was eliminated. Comparable-size units are now called Marine Air-Ground Task Forces. This singular loyalty, in a real sense, exemplifies Secretary Brucker's goal of "One Army."

The exchange of Army and Marine doctrine stimulates progressive ideas and promotes mutual understanding. We look to the Marines for much of our amphibious assault doctrine and have great interest in their new developments and techniques. In turn, the Marine Corps looks to The Infantry Center in particular and the Army in general for ground combat tactics and techniques. Partners in peace, comrades-in-arms during war, we should always be able and ready to work together. The Army officer who is given the opportunity to attend either the Junior or Senior Marine School is indeed fortunate. He will find it a pleasant and profitable experience that will benefit both the service and himself. There is much we can learn from our fellow Infantrymen in the Marines.

Lt Col Albert H. Smith, Jr., was commissioned in the Infantry in 1940. In World War II he served with the 16th Infantry Regiment, 1st Division, rising to the post of regimental S3. He took part in three amphibious assaults —the invasions of North Africa, Sicily and Normandy. Returning to this country in 1945, Lt Col Smith was assigned first as assistant G3, Headquarters, Army Ground Forces, and then served in the same capacity with Headquarters, Second U.S. Army. From 1948 until 1951, he was a management analyst and later, assistant executive, Management Division, Department of the Army. Overseas again in Europe, he was comptroller, Headquarters Base Section, U.S. Army Europe. In 1953, he became a battalion commander in the 18th Infantry Regiment and, a year later, regimental executive officer. His next assignment was as a student at the Senior Marine School, Marine Corps Schools, Quantico, Virginia. In July of last year, Lt Col Smith began his present assignment as an instructor in the Tactical Department's Regimental Committee.


FEET

Until a B-52 can occupy a city or

a submarine can take a hill, we need

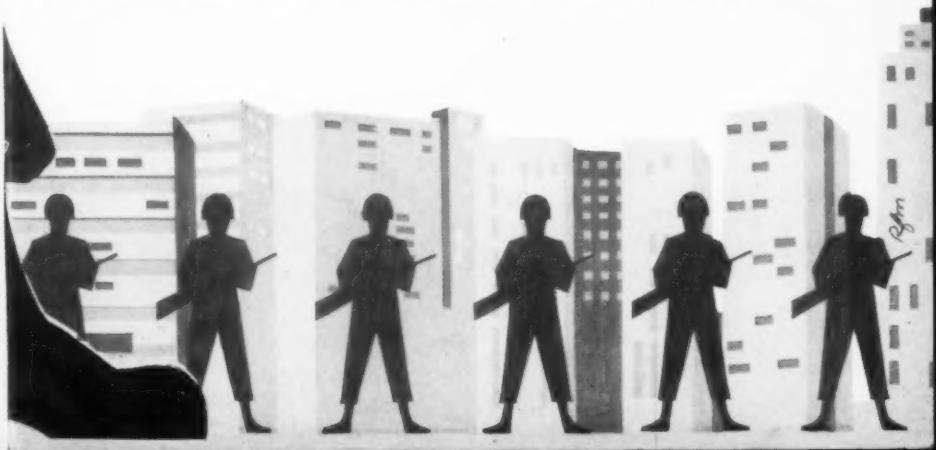
I THE GROUND

There is literally no military task on earth consistent with our national policy for which *THE* instrument (fighting men with their feet on terra firma) is not necessary. Such an instrument can take a base or defend one. It can invade and possess an enemy heartland. Only with feet on the ground can we enforce terms of peace and accomplish our national objectives. Nothing invented by man has ever neutralized the effectiveness of this instrument.

Although a modern Army division employs machines as marvelous as any envisioned by "men from Mars," this instrument of military force is still *controllable and selective*. It need not annihilate in order to liberate. It need not invite mutual extermination in order to defend. It can halt at a national boundary or at a city limit if necessary. It can distinguish friend from foe—the enemy soldier from his innocent child. It can heed the warning of a prophetic genius—Stephen Vincent Benet; it can cut down the weeds, yet "leave the grain standing in the field!"

Here in our country, a dangerous thought about Army divisions is being inferred these days. However obliquely worded by those who express the thought the implication is not "How many?" but "How few?"

"I can buy it cheaper for you wholesale," is a misconception of national security that has always had an insidious appeal to business-minded America. Dazzled by the potential of chemical agents for wholesale destruction revealed in World War I, the country was unprepared with sufficient combat-ready divisions to prevent the tragedy of World War II. Dazzled by the potential of the atomic bomb for wholesale destruction



This article has been extracted from a speech by General Willard G. Wyman, Commanding General, Continental Army Command, to the 1st Infantry Division reunion in Boston. While this subject is somewhat beyond the scope of that normally published in the *Quarterly*, it is felt that the thoughts expressed by General Wyman are especially important to all of us and should be of great interest to *Quarterly* readers.—Editor

GENERAL WILLARD G. WYMAN

revealed in 1945, our country was unprepared with sufficient combat-ready divisions to prevent the limited warfare of Korea. Today, some writers are so awed by the potential of thermonuclear weapons for wholesale destruction that they suggest we make the same mistake again. Other observers fear that the holocaust of unlimited nuclear warfare is just around the corner.

In response, I say it is true that this is possible. It is true that *unlimited* warfare is just around the corner. That is precisely where it has always been since time began—*just around the corner from man's sanity*. Without the sanity of moral law even in war, mankind would have been reduced to nonentity long ago. It could have been done just as surely with stones, clubs or swords. And more quickly, just as cheaply, with chemicals or germs.

The unalterable truth is that all man's wars are "limited"—not by weapons but by *man*. In fact, the history of warfare during the last 6000 years reveals that the social destructiveness of wars has been in *inverse ratio* to the destructiveness of the weapons available to man. For example, Germany lost one-third of her population during the seventeenth century in a war waged with flintlocks and pikes—compared with less than 10 percent lost in World Wars I and II. In our country, compare the casualty lists of the Civil War with those of Korea. Historically, the more powerful the weapons that man has discovered, the more selective he has been in their use. Is this an absurdity as some have said of the conflict in Korea? Or is it simply *sanity?*

Let us consider for a moment some of the ridiculous but dangerous situations that our nation might face in the future if we had no instruments of selective force in our armament.

Imagine what the reaction among our allies would be if this country announced that it would contribute no divisions at all to the defense of the free world! How long would they dare remain our allies? How long would it be before Communist troops would be on the march under the pretext of civil war or in the guise

of volunteers as they did in Korea and Indo-China? How would we stop this covert aggression? . . . With wholesale destruction of friend and foe alike?

To bring the problem closer to home, imagine that a strong band of Communists were to seize control of the Panama Canal . . . or your home city for that matter! Without an Army division to fly to the scene, what would be our choice of response? Would we blow up the Canal and your city? Or would we let the intruders keep the spoils?

In a more logical vein, let us consider one of the many situations that could occur in the event of an open declaration of war against the United States by the Communist Bloc. Let us imagine that it would be a *limited* war waged with atomic and conventional weapons against military targets. Under such conditions, we have been told that we could expect immediate and devastating aerial blows against all of our strategic air bases (fixed and floating), against key port facilities, against communication centers, and against vital aircraft production plants.

At the same time, of course, our own splendid Strategic Air Force would be inflicting as much or more damage on the enemy. Considering the effectiveness of the offensive and defensive weapons that could be employed simultaneously in an aerial battle of this scope, it has been conceded that daily losses in aircraft and in the facilities to sustain and replace aircraft would run very high on both sides. Consequently, it is conceivable that airpower on both sides would be reduced to relative impotency in a matter of weeks.

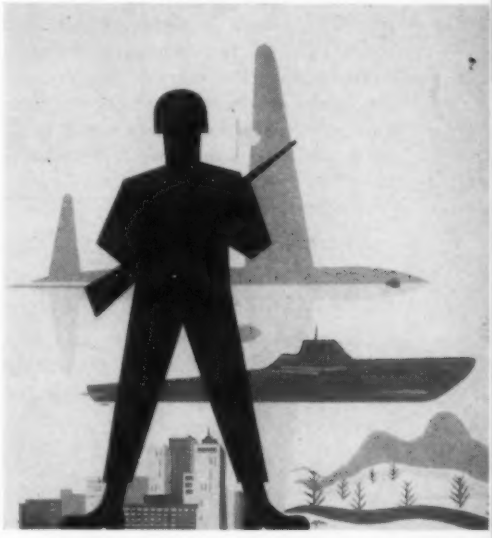
At this point some crystal-ball gazers call the war off! But what if this is precisely the situation that the enemy has been prepared and waiting for? Without combat-ready divisions of our own—already trained and fully equipped—how can we stop the enemy from planting the Hammer and Sickle on the front lawn of every home in the United States?

If such speculation sounds fantastic, please remember it is in response to a fantastic question. As with fire, sometime one must fight fantasy with fantasy.

Returning now to reality, I want to assure you most emphatically that your defense planners have no intention whatsoever of replacing the Army division with anything that razes, radiates, flies, floats, buzzes, booms or bangs. On the contrary, we are continuing to equip your divisions with controllable weapons and machines that can do all of these things and many more.

Until the day when the submarine can take a hill and a B-52 can occupy a city, I predict that the Army division will continue to be the decisive instrument of military force in the arsenal of democracy. I say that with confidence because I believe in the sanity and the morality of the American people. I believe in the sound judgment of the men chosen by democratic processes to lead us.

In the world of reality people, not



weapons, determine national policy. Never can I conceive of a day when the threat of mutual annihilation could be the national policy of the American people for dealing with any and every kind of armed aggression. Nor can I conceive of a day when they would be willing to buy peace at the shameful price of creeping surrender.

I have spoken of the Army division for the sake of rhetoric as if it were a fixed entity. But a division is not a static organization. Like all elements of the armed forces, it has undergone an evolution as profound as that of our twentieth century technology.

This evolutionary process is continuing today throughout the Army. It is the subject of constant study at the Department of the Army, the Continental Army Command, the Command and General Staff College, and at each of the Combat Arms schools. We are projecting our thoughts as far as 20 and 30 years into the future to determine what the Army must have to continue producing decisive combinations of weapons and men.

We approach this problem by thinking in terms of the principles of war which are timeless—not in terms of solutions which are transitory. For us to be governed by a single concept of future warfare in the development of weapons, material, tactics and techniques would be as sterile as in the development of national policy and strategy. Instead of focusing upon "A" battle of the future, we focus our thinking upon the fundamentals which characterize all battlefields: *Firepower* plus *Mobility* plus *Communication,* equals *Critical Force at the Point of Decision.*

So tightly interlocking are these elements that the slightest alteration of one has a chain reaction on the others. This chain reaction has been given great impetus in the evolution of warfare by the introduction of atomic weapons for tactical use. The need for dispersion of units in greater depth in the battle area is already here.

To scatter units over a large battle area without the adequate means to move and control them would be tactical suicide against the Communist masses of armor and men. We must have tools that will give our divisions cross-country and vertical mobility.

Since defense budgeting is under constant scrutiny in light of world trends and developments, we can hope that some of our most compelling requirements (material) may receive earlier emphasis. I am thinking now especially of tactical aviation, and of the airlift which we must have for strategic mobility to fulfill our world-wide mission. I trust that our legitimate needs will never be mistaken for mere ambition.

No matter how many worthy and essential noncombat tasks you may be called upon to perform, no matter how many assignments along the more pleasant paths of duty may be yours, you must guard with jealous care your most priceless possession—your soldier's soul.

You are a fighting man. If all our earnest efforts to preserve the peace should prove futile, if war should finally be thrust upon us, your job would be to fight and lead our troops to victory in battle.

This is the immutable obligation of your profession. When the chips are down, all else is secondary.

SECRETARY OF THE ARMY WILBER M. BRUCKER

TAX TIPS

Here are some tips on income tax deductions for military personnel which may help to save you money

This is the season for filing income tax returns. (April 15 is the deadline, in case you have forgotten.) Our purpose in this brief article is to point out the few special deductions available to service personnel and to explain how military pay and allowances should be treated for income tax purposes. The article was prepared by the Georgia Society of Certified Public Accountants in reply to questions from the Quarterly *and is based on information furnished by the Internal Revenue Service.*

—Editor

In most respects, Internal Revenue laws apply to military personnel in exactly the same manner and to the same extent as they do to other taxpayers. That is, the rules for determining liability for filing and computing income and tax deductions concern all taxpayers, whether they are servicemen or civilians.

However, there are certain items, particularly deductions, which are peculiar to members of the armed forces.

First, let's take the matter of uniforms. Regulations prescribe the specific type of uniform to be worn. If a serviceman is required to purchase his own, it is a necessary expenditure. Yet the uniform may be, and often is, worn off duty. Therefore, it has long been held that Army uniforms take the place of ordinary clothing and that their cost is a personal, *nondeductible* expense. The one exception to this rule is the nurse's white duty uniform.

Since uniforms are personal and not business assets, the cost of cleaning and maintenance is likewise personal, and no deductions for upkeep or depreciation are permitted.

Now suppose that a change in regulations makes a uniform obsolete, as will soon be the case with the officer's pinks and greens. It will lose its value completely as a uniform. But a loss on a personal asset does not give rise to a deduction unless the loss is the result of a casualty or theft. Since abandonment is not a casualty, there is still no deduction.

What tax benefit, then, if any, is available? The law allows a deduction for contributions to certain charitable organizations if the taxpayer files the long form and itemizes his deductions. It is not necessary that a contribution be made in cash. If it is made in property other than cash, a deduction equal to the fair market value of the property at the time of the gift is permitted. This rule would apply, for example, to a gift of an obso-

lete uniform to the Salvation Army. The fair market value is, of course, a question of fact.

However, the reasoning behind the disallowance of uniform cost—that the uniform replaces ordinary clothing—does not apply to other items worn by the serviceman. Cap devices, shoulder insignia, chin-straps, wings, sword, epaulets, braid, etc., do not replace ordinary clothing but are required to indicate rank and branch of service. The cost of these items is deductible.

The Internal Revenue Service has held that where an officer maintains membership in an officers' club on a voluntary basis, even though membership has come to be regarded as customary among officers, it is not so closely related to the performance of his duties as to justify the allowance of his dues as an ordinary and necessary business expense. The same rule applies to dues paid by enlisted personnel to a noncommissioned officers' club.

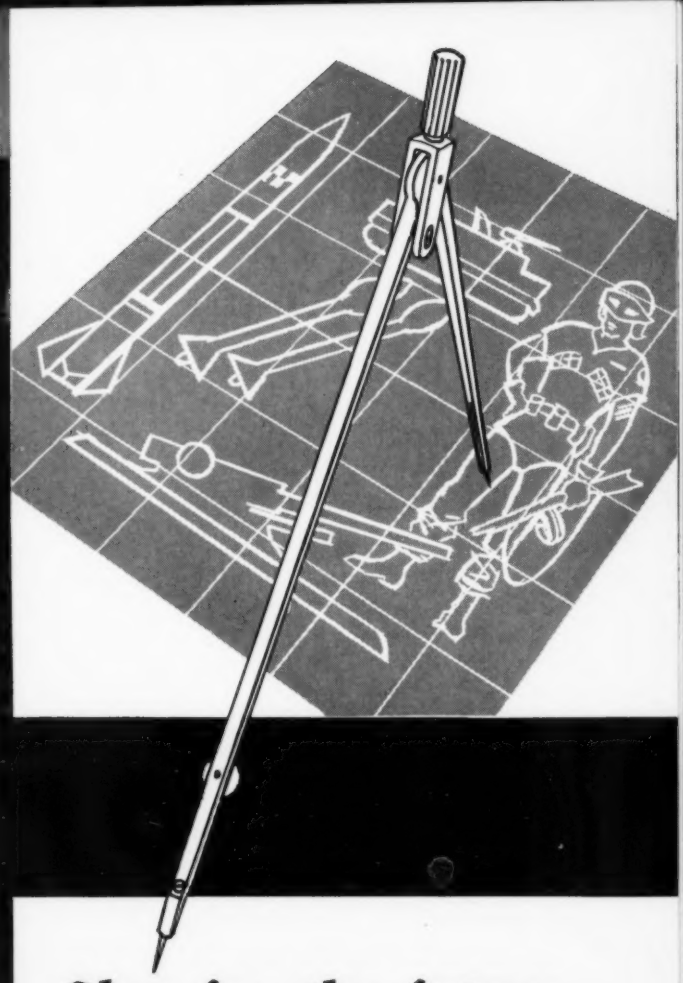
As to all other expenses, which we cannot discuss individually, remember this rule. To be deductible, an expenditure must be directly related to a trade or business (and for tax purposes, a serviceman is held to be engaged in a trade or business) and, in addition, it must be ordinary and necessary. This rule should be applied to determine the deductibility of such items as military books and subscriptions to military publications. Whether such expenses are ordinary and necessary and directly related to a trade or business are questions of fact to be decided in each case, but all the requirements must be satisfied.

Also of interest to military personnel is the matter of how to handle the allowances for subsistence and quarters, mileage allowances, per diem allowances in lieu of subsistence and actual expenses incurred while in travel status on official business.

The subsistence and quarters allowances are excludable from gross income and need *not* be reported on your return. The W-2 Form (statement of tax withheld) furnished by the finance officer already excludes these allowances. The amount shown on this form as your wages for the year represents only your base pay, longevity and hazardous duty pay. This amount, plus per diem and mileage allowances (under a 1955 ruling), dividends, interest and other income is your gross income. Actual expenses incurred in connection with official travel are deductible from gross income—whether they are more or less than the allowances received for such travel. The effect of the 1955 ruling is to eliminate the basic subsistence allowance as a factor in determining the amount deductible for travel expenses. In other words, it is no longer necessary to offset the expenses against the basic allowance.

Let's illustrate. In addition to his base pay, longevity and hazardous duty pay, an officer receives subsistence and quarters allowances of $1800. During the year he was paid $300 per diem allowance in lieu of subsistence and $100 mileage allowance for temporary official duty away from his station. His actual expenses for transportation, meals and lodging were $450. For tax purposes, the $1800 is not considered as income and, therefore, is not entered on the return. But the $300 and $100 are income and must be reported. The full amount of actual travel expenses is allowable and should be deducted from gross income.

If you have any questions or need specific advice or assistance with your income tax return, see your legal assistance officer or your nearest Internal Revenue Service agent. Local Internal Revenue Service offices usually will be glad to send an agent to conduct classes for personnel selected as "tax specialists" for battalion or larger size units.



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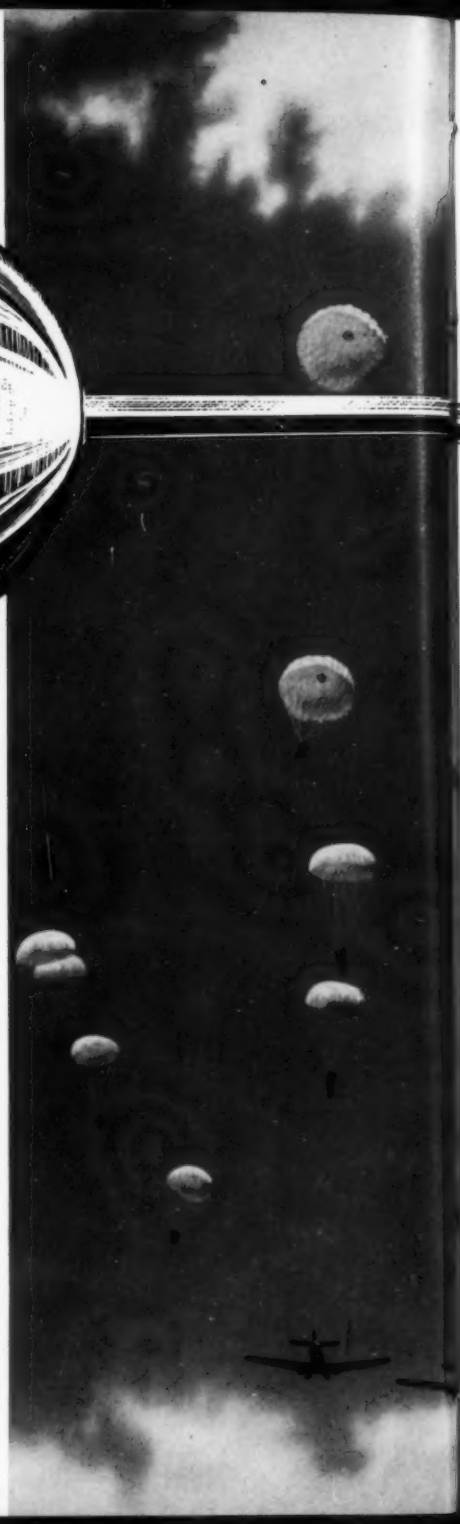


This is the conclusion of a two-part article based on tape-recorded interviews with German airborne general Kurt Student. The Germans were the first to develop and employ strategic airborne warfare but Hitler failed to grasp its significance. We profited from German experiences and soon outstripped them.

By CAPT BOYD T. BASHORE

The United States Army is the most airborne-minded ground fighting force in the world today. This was not always true.

SWORD OF SILK

Generaloberst Kurt Student stood momentarily awed by the airborne spectacle he was watching. It was Sunday, 17 September 1944. Over his head roared Operation Market Garden—flight after flight of Allied troop-carrier planes and gliders, the largest airborne operation in history. Student's chief of staff, Colonel Reinhardt, rushed up and stood silently beside him on the roof of the Dutch manor house that was the headquarters of Student's First German Parachute Army. Together they watched, incredulous, as the tremendous air armada thundered on through the sky toward key bridge objectives over the Maas (Muese), Waal (north arm of the Rhine) and Lek (south arm of the Rhine) Rivers. The 1st British Airborne Division was headed for the vicinity of Arnhem, the 82d Airborne would drop between Grave and Nijmegen and the 101st Airborne between Grave and Eindhoven.

For a moment Student stood lost in unabashed envy of the overwhelming industrial production that the operation represented. Over 2800 troop-carrier planes and 1600 gliders were in action. "If only I could have had an airborne force like that under my command," he muttered to Reinhardt.

Then Student smiled grimly. Obviously the Allies were attempting, in reverse, a mission similar to that of his own earlier airborne operation in Holland. Airborne was attempting to clear a path for massed armored units to strike through the strategic Netherlands. Holland, which had been the doorstep into France on two German invasions, was now the hoped-for "gateway to the Fatherland" for an Allied end run around the West Wall north to the Third Reich.

And as Student stood on that rooftop near Eindhoven watching the First Allied Airborne Army drop around him, he could not help but remember the history, the "rise and fall," of the German airborne effort with which he had been so closely connected. He recalled the first days of experimentation with the parachute and glider battalions around Stendal and Juterbog—days when he fought a continuing battle over the importance

CAPT BOYD T. BASHORE enlisted in the Army in 1943. He took jump training the following year with the 541st Parachute Infantry Regiment and then remained at the Parachute School as an instructor. In 1945 he was commissioned from OCS but later resigned his commission to attend the United States Military Academy. Upon graduation from the Academy in 1950, he was assigned first to the 505th and then to the 508th Airborne Regimental Combat Teams. Two years later, he went to Europe where he served as a company commander and staff officer in the 42d Armored Infantry Battalion of the 2d Armored Division. After completing the advanced course at The Infantry School last May, Capt Bashore began his present assignment as aide-de-camp to Maj Gen Joseph H. Harper, Chief of the Joint U.S. Military Advisory Group to the Philippines.

of airborne with the conservative senior generals of the Army and Luftwaffe. "Parachute and glider troops are only good for 'Zerstorung taktik,' small guerilla tactical action," insisted the old-school Wehrmacht and Luftwaffe leaders. Student countered that airborne would change the scope of all ground warfare. He visualized entire airborne corps and armies being dropped strategically in vertical envelopments. And now, in a sense, he was observing from that rooftop the fulfillment of his dream. Only it was an *Allied* airborne army accomplishing a vertical envelopment against his groundlocked parachute army, now airborne in name only.

At the beginning of World War II the German airborne successes had begun to fulfill Student's prophecies. At the same time they had also convinced the Allies of the strategic value of airborne troops. The peaceful and unpublicized German airborne invasion of Freudenthal in Czechoslovakia and later the shooting-war airborne actions in Norway were harbingers of bigger things to come: Holland, the first true strategic use of airborne; the proof that a large airborne force, an airborne corps, could accomplish a strategic mission.

In Rotterdam, however, during the Dutch capitulation, Student himself was shot in the head by a sniper. This wound took him out of action during the critical days that followed when the opportunities for an airborne invasion of England slowly faded with the rise of overwhelming Allied air superiority. Shortly after his convalescence Student himself had to turn thumbs down on Hitler's imaginative plan for an airborne invasion of Gibraltar because Franco would not permit a ground linkup force to roll over Spain. Next, with the invasion of Greece, came the small tactical success of the Corinth jump, an airborne prelude to Crete.

Then came Crete, a pyrrhic victory won by airborne forces alone unsupported by any appreciable seaborne reinforcements or supplies. Here was the strategic success that galvanized the Allies into more serious airborne efforts; a victory in which approximately 40,000 Allied troops, on an island fortress, were defeated by 18,000 lightly armed German paratroopers who had been expected for days; the astounding accomplishment for which Student had argued and cajoled to get Hitler's approval. Yet, surprisingly, Crete was to be the swansong of German airborne.

Hitler remembered the critical touch-and-go days for the airborne on Crete after the seaborne reinforcements failed to arrive. He remembered the carnage that the British fleet had caused among the inadequately protected troop ships of the floating reserve. Shocked by Crete's heavy losses Hitler had said, "Student, Crete has proved that the day of your

paratroopers is over. Airborne troops are a weapon of surprise. Surprise is now impossible." Student first heard this on the day that he was decorated with the Knight's Cross for his leadership of the battle of Crete. And, perhaps fortunately for the Allies, he was to hear it often from then on until the day the Allies themselves again opened Hitler's eyes to the strategic value of airborne.

From the moment that Hitler uttered those words the German airborne effort began to stagnate. Although for a time airborne training continued and the troop strength increased, the German airborne corps was never again to be used for a strategic airborne mission. Hitler had been so affected by the casualty figures on Crete that he was unable to comprehend the true meaning of this German airborne victory. For the first time in military history lightly armed airborne troops, outnumbered more than two to one, had conquered a distant island that was surrounded by an overwhelmingly powerful fleet. Paradoxically enough, it was this selfsame battle that caused the Allies to seize from the Germans the torch of faith in strategic airborne which a number of years before the Germans had so unceremoniously grasped from the Russians.

As Student himself so aptly phrased it, "The only strategic planners who really profited from our airborne invasion of Crete were the Allies. Intelligence reports gave me the details of your Allied Airborne buildup. In May of 1941, when we Germans had practically a complete airborne corps, 15,000 well-trained jumpers and 12,000 glider troopers, the Allies had nothing but an untried theory. At Benning you Americans had little more than an airborne test company. The British had about a battalion. It appeared that the U.S. War Department felt that parachute troops seldom, if ever, would or could be used in over battalion strength. Your high-level planners obviously were instilled at first with the same lethargic opposition to the strategic use of airborne that a few years before I had found in most of the senior generals in our Luftwaffe and Wehrmacht.

"And then came Crete, the final catalyst. Shortly thereafter, at a time when your Allied parachute training swung into high gear as a result of your detailed evaluation of our operation on Crete, our own airborne effort slowly began to deteriorate. We had a few hopeful ups, such as Malta, and many downs, until in the end there was nothing but the myth of a true airborne capability in our Luftwaffe.

"After Crete I periodically reported to Hitler the frantic Allied activation of airborne elements. I also tried to convince him that the next logical steps were the airborne invasions of Cyprus, and from there the Suez Canal to form an airhead for Rommel's panzer linkup. Prior to Crete Hitler had not been adverse to this plan, but shortly thereafter he seemed uninterested. Of course, he had his hands full in Russia.

"With each new important intelligence summary confirming a further step in the American buildup, I would personally brief the Fuehrer. However, he refused to believe anything I said. And in 1942 when you Americans finally activated your first airborne divisions, Hitler contended that the figures which clearly established your airborne emphasis were lies. At best he argued that they were greatly exaggerated."

Hitler's skepticism of Student's reports was further increased by the lack of any overt use of airborne on the part of the Allies for such a long period after Crete. When airborne failed to participate in the Allied raids at St. Nazaire in March and later Dieppe in July 1942, Hitler became even more critical and impatient

with Student's airborne reports. "See here," shrilled Hitler, "your reports are not true! The Americans and British haven't any airborne. They are not activating such troops. I was right! Now you just go away!"

But in spite of these outbursts Hitler actually showed a brief resurgence of his old faith in airborne. For months the Germans and Italians had glared at that throbbing cancer near the toe of the Italian boot, the Allied-held island of Malta. From Malta Air Vice-Marshal Lloyd's RAF fighters and bombers had made it increasingly difficult for the Germans to supply and communicate with Rommel's Afrika Korps. During March and April the Luftwaffe turned on the island in fury with day and night bombing attacks. It appeared to be devastated but the Axis noted that whenever the attacks slowed or stopped, the island would again begin to take its toll of German and Italian shipping. Malta itself had to be physically captured and occupied.

With the physical conquest of Malta in mind Mussolini had a conference with Hitler at Berchtesgaden at the end of April. The two dictators agreed that Operation Hercules, the conquest of Malta, would be launched in July, immediately after Rommel's planned drive on Tobruk. They felt that the only military instrument capable of cracking the hard outer shell of the Malta nut was airborne. And airborne called for Kurt Student.

So shortly after the Berchtesgaden meeting General Student was ordered to Rome to see Field Marshal Kesselring, the German Commander-in-Chief, South. Kesselring briefed Student on Hercules and gave him command of the airborne portion of the invasion. Student was the highest German commander directly involved in the operation. The over-all command of the joint airborne, seaborne, naval and air operation was assigned to Count Cavallero, the Italian Chief of Staff.

Authorities differ as to exactly what troops were assigned to Hercules. Student contends that Hitler placed at Mussolini's disposal the entire German airborne, which at that time totaled two more German airborne regiments than had been available for the invasion of Crete. In addition Student had under his command the two Italian airborne divisions "Folgore" and "Superba" which had been trained to peak operational readiness by the German airborne specialist, General Ramcke.

Poised, ready to sink its talons into Malta, was Student's force of more than 30,000 airborne troops: approximately 25,000 paratroopers and 5000 glider Infantry.

In addition Hercules was to be supported by more fighter-bomber strength than had been available at the height of the air attacks that had almost crippled the British forces on the island in March and April. And to correct the expensive lesson learned on Crete, seaborne reserves, heavily guarded by the Italian fleet, were to attempt an immediate link-up with the airhead. Some of the best Italian units had been hand-picked and trained for this job. The special Italian naval unit "San Marco," assigned a mission similar to our underwater demolition teams, was to clear the way into the difficult beachhead. Next would come the Alpini division, Italian mountain troops, whose mission was to scale and secure the precipitous cliffs around the landing areas. Once the beachhead, or more properly the cliffhead, had been secured, it was to be reinforced over the sea by up to seven assault divisions. Supporting the land forces would be gunfire from ships of the Italian fleet, including the Duce's four new battleships which, up to this time, had been coddled like babies.

Malta posed entirely different strategic and tactical problems from Crete. The island was heavily fortified. "And in spite of the density of the fortifications," said Student, "it was imperative to achieve surprise. I decided to do this in two ways: First, I wanted to drop my paratroopers right at midday when the Mediterranean sun would be burning hot, when most of the British would be resting. Secondly, I wanted to have my major drop where the British would least expect me. Running across the isle of Malta was the Victoria fortification line. I considered the critical terrain to be the southwestern heights in the vicinity of this Victoria line. For this reason I planned to jump directly on this line as a major objective. From there, in conjunction with the seaborne assault divisions and the heavy aerial bombardment, we could assault the airfields and the harbor of La Valetta."

All of the Italian-German troops had been specifically trained and briefed. The troop-carrier aircraft, the gliders and all the necessary ships and boats for the heavy equipment, which included an ample number of tanks, had been assembled. Everything was ready. Student hoped to carry out Hercules not later than August. All he needed was good weather.

Then in June Student suddenly was summoned to the General Headquarters at Rastenburg to brief Hitler on Hercules. Evidently Hitler considered the airborne action to be the key to success. Apparently, Student was to be the senior German commander in the invasion, since Kesselring was not invited to this meeting.

"For several hours I briefed Hitler in detail," explained Student. "He sat and listened to me quietly and patiently. When the briefing was finished, however, he looked at me and said, 'Student, the operation of your paratroopers certainly would be a success. But soon the British fleet would arrive out of Alexandria and Gibraltar. Then, Student, you would see the Italian Naval Forces fly in fright back to the Italian harbors. Your paratroopers would be left alone, unsupported on the island!'

General Kurt Student plans the airborne assault on Malta, June 1942.

"Even after that meeting Hitler still wavered in his decision to attack Malta," continued Student, "but after Rommel's surprise capture of Tobruk it was canceled. Today, of course, with the advantage of hindsight, I am certain the operation would have been a great success. Malta had been besieged for months, the target of frequent and devastating air attacks. The troops on the island were very badly off. They were starving and lacked antiaircraft ammunition and the reserves to repel us. The British could not have supported Malta garrisons with any sizable concentration of troops and

supply ships. Only small patrol craft had been able to get in.

"I considered Malta to be a frightened and cowed rabbit just waiting to be swallowed by a boa constrictor. And I was that snake. Only a final blow was needed. Unfortunately we failed to strike that blow, and our shortsightedness later affected our ability to operate in the Mediterranean."

Again, with the postponement of Hercules, the German airborne effort settled into inactivity. When Rommel's offensive in Africa finally came to a standstill his frantic cries for replacements were fulfilled by rushing the air force and one division of the airborne strength that had been ticketed for Malta. As the need for the German conquest of Malta again soared with the frantic need to resupply the defeated Afrika Korps, the ability to accomplish this mission had been frittered away in reinforcing Rommel so that in the end Malta could not have been conquered. As Rommel himself wrote, "It never proved possible to get an attack organized and mounted on Malta. I had offered to carry out this enterprise myself and am convinced that, given the number of troops for which I asked and proper support from the sea and air, I would have succeeded in taking the island fortress. With Malta in our hands, the British would have had little chance of exercising any further control over convoy traffic in the central Mediterranean. Malta has the lives of many thousands of German and Italian soldiers on its conscience."

During the months that intervened Student continued to brief a still disbelieving Hitler concerning the buildup and training of Allied airborne forces. During these interviews Student also pressed for action—on either front—for his potent airborne force. Finally in the early spring of 1943 Student *almost* had his wish fulfilled.

Hitler had been trying fruitlessly to overrun the besieged Russian fortress city of Leningrad ever since it was first surrounded by the German attack in the fall of 1941. Although the city had been subjected to incessant attacks and observed artillery fire by the German Eighteenth Army, after almost two years it still held.

In desperation Hitler finally ordered Kurt Student to plan for an invasion of Leningrad with his airborne corps. To better plan the operation Student flew to Russia to observe personally the defenses of the city. But before his plans had progressed very far, the reorganized Russian Army attacked successfully on the Eastern front in the 1943 summer offensive, and the Allies defeated the remnants of the African Army under General von Arnim at Tunis.

Because of these decisive defeats the fortunes of war changed and Hitler canceled the Leningrad jump. He decided instead to hoard the airborne corps as an air-mobile strategic reserve.

"In the summer of 1943, for the first time since the battle of Crete," said Student, "I finally succeeded in reassembling all the paratrooper units again under one unified command. The entire 11th Air Corps was poised in southern France as the high command's strategic reserve primarily for the Mediterranean theater. Our headquarters was at Nimes. The troops were accommodated in the valley of the Rhone and to the west of there, from Avignon up into the hills of Valence and down to the shores of the Mediterranean. On the immense plain of Istres was a mighty armada of carrier gliders, more than 500 planes, amongst which were the 'Gothic' and 'Giant' gliders."

At this time Student's manpower reached its peak of airborne-qualified personnel, swelling to over 40,000 trained paratroopers. Except for minor opera-

General Student criticizes an exercise at the Atlantic Wall in May 1943.

tions, however, the German airborne, as such, had not been committed on an airborne mission since Crete.

"Meanwhile," continued Student, "the western powers had taken possession of North Africa. They were expected to strike next against Sardinia or Greece. Sardinia was within direct operating range of my paratrooper corps. For that reason I proposed that an immediate airborne counterattack be conducted against any enemy beachhead there. Hitler, Goering, Jeschonnek and Jodl, the high command of the Wehrmacht and Luftwaffe, agreed to that."

Contrary to the German expectation, however, on the 10th of July 1943 the Allied Fifteenth Army Group invaded Sicily. And this invasion was spearheaded by the 82d Airborne Division, commanded by General Matthew B. Ridgway, a division that Hitler did not believe existed!

Student's parachute corps was alerted immediately. The German Army high command, however, did not believe that Sicily was the main landing. They expected further landings either in Sardinia or even on the shores of southern France. So initially only the First Parachute Division, commanded by General Heidrich, was air-transported to Sicily, with stops at Rome and Naples. The headquarters of the Airborne Corps and General Ramcke's 2d Division remained in southern France.

Partially because of Sicily's extreme range and confused combat situation, but mainly because Field Marshal Kesselring thought a single parachute division too meager a force for any decisive effect, the First Parachute Division did not jump directly into the Sicilian beachhead fighting. ". . . the tactical principle that one's forces must be reasonably matched with those of the enemy holds good even for

parachutists," wrote Kesselring. The paratroopers attempted instead to jump and seize critical areas on the plain of Catania, just behind the established German defensive line. Regimental combat teams made the jump.

But in one case Student's principle of jumping directly into an airhead was accidently, although inconclusively, tested by the British. On 13 July in the afternoon a German parachute regiment jumped and assembled behind the German lines with the mission of securing the critical terrain around Ponte di Primosole. Towards evening, British airborne troops suddenly dropped directly into the established German airhead. The British, of course, had no idea that they were jumping into such a hornets' nest. Fierce close-in fighting followed during the night. A small British force reached the Primosole bridge, their objective, as well as the Germans', but lost it the next morning. The British airborne finally was defeated, although on the 15th the bridge was captured by the 50th Division in a conventional ground attack.

On the other hand the entire German First Parachute Regiment was almost defeated when it jumped to secure a critical gap in the German lines. Immediately after assembly, the regiment was unable to make contact with the other German units on its flanks. The advancing British quickly outflanked and encircled the regiment. The German Sixth Army gave up hope for the paratroopers. And it was only after considerable fighting that Colonel Heilmann, the regimental commander, was able to maneuver his troops back into the German lines.

Although Student was never really able to test his airborne counterattack theory in combat, an analysis of these tactics by the historical section of the Army reached these conclusions: "An air landing into an enemy airhead will always result in confusion on both sides. It will, of necessity, lead to chaotic hand-to-hand fighting, similar to the cavalry battles fought centuries ago, in which ultimately the tougher and more tenacious fighter will be victorious. The initial advantage is definitely gained by the opponent who is aware of the situation and jumps into the enemy airhead deliberately. If, in addition, he is supported from the outside by a concentrated thrust on the ground, it is quite likely that he will succeed in achieving a complete victory."

Commenting further on the Sicily jump, Student said, "Your 82d Airborne was dropped into Sicily as an independent unit. It was your first important airborne operation, and you experienced the same growing pains that we had experienced on Crete.

"Your drops were all mixed up and scattered, in some cases up to ten kilometers from the intended drop zones. But in spite of this unfortunate drop, the 82d captured bridges and set up strongpoints of resistance. This was splendid fighting on the part of the American paratroopers. Except for the ability of your paratroopers the Herman Goering panzer division would have pushed to the sea."

On the afternoon of 26 July General Student again received an order to report immediately to the Fuehrer. He knew that something important must have happened. Student made the five-hour flight from Nimes to Rastenburg, Hitler's secret headquarters in East Prussia, and arrived just at dusk. "I was taken without delay to Hitler," Student wrote of the meeting. "He received me alone in the briefing room, a plain room in the wooden barracks, furnished in Prussian simplicity. Hitler declared, 'I have chosen you and your paratroopers for a very important task. Yesterday the Italian king relieved the Duce from office

and arrested him. Undoubtedly Italy is on the brink of deserting us and means to change over to the enemy camp.' Hitler added, 'As quickly as possible move all available paratroopers to Rome. You will be responsible to me personally that Rome is held.' "

Within a few days Kurt Student air-transported the remaining units of the 11th Air Corps to Rome. Approximately 18,000 paratroopers were flown into the Frascati di Mare airdrome and quickly deployed into the Pontine Marshes. The swift deployment of Student's airborne reserve quite naturally incensed the surprised Italian high command, since the Germans had conveniently neglected to inform them of the impending maneuver. As a matter of fact Hitler also neglected to inform his Commander-in-Chief, South, Marshal Kesselring, of this move. Kesselring had no inkling of the 2d Parachute Division's shift until General Ramcke and his entire division suddenly landed at Kesselring's airfield headquarters.

German and Italian tempers flared. The wavering Italians took every opportunity to make life miserable for this unwelcome force, from the use of high-level protests to Field Marshal Kesselring down to making an affair of state out of every arrest of a German paratrooper by the carabinieri for picking berries in the king's game preserve.

To counter the presence of this German threat the Italian high command in a gigantic game of chess immediately began moving handpicked divisions into Rome. Seven divisions in all were finally positioned to checkmate Student's force, which consisted of little more than his reinforced 2d Airborne Division plus the Third Panzer Grenadier Division which was poised about 80 kilometers to the northwest of Rome. The Italians situated their troops in bivouacs that dominated or hemmed in the German camp areas. It was, of course, during this period, starting on 3 August, that the first Italian peace feelers clandestinely were sent out to the Allies through the Italian Legation in Lisbon.

On the 7th of September 1943 General Maxwell D. Taylor secretly slipped into Rome right under Student's nose. This mission was to arrange with Badoglio and the Italian General Staff for the Italian seizure of the airfields around Rome. The Italians were to turn against the Germans on the night of the 9th to facilitate the drop of the American 82d Airborne Division on Rome, part of the over-all Allied plan for the conquest of Italy. At the same time Italy was to renounce the Axis and begin its own fight for freedom.

Of Taylor's conference Churchill writes, "Divided counsels seethed round Badoglio. Taylor demanded to see him. Everything hung in the balance. The Italian leaders now feared that any announcement of the surrender, which had already been signed, would lead to the immediate German occupation of Rome and the end of the Badoglio Government. At two o'clock in the morning of September 8, General Taylor saw Badoglio, who, since the airfields were lost, begged for delay in broadcasting the armistice terms. He had in fact already telegraphed to Algiers that the security of the Rome airfields could not be guaranteed. The air descent was therefore canceled."

Concerning this proposed Rome jump of the 82d Airborne, Student commented, "Badoglio and Carboni purposely gave Taylor a deceptive picture of the state of the Italian and German troops around Rome and the defenses of the airfields. I was the German commander in Rome. Carboni was my counterpart on the Italian side. Carboni had seven divisions. I had but two divisions.

"I still shudder when I think about it. I, an old airborne commander, had not

even considered the possibility of an airborne attack. Contrary to the Italian reports, most of the airfields had no adequate defenses. The drop of the 82d Airborne on the 9th of September would have been a total surprise to me. I believe that this proposed landing would have been a success. About a year later I personally fought against this 82d Airborne when they were dropped in Holland. They were splendid troops. If they had been dropped at Rome their superb combat ability combined with the action of any Italian units in that area, would have caused me much trouble.

"The first I even knew about this landing, of course, was one year later when Churchill spoke about it. I next got the details from General Gavin's book [*Airborne Warfare*]. If the Americans had landed at that time I believe I would have lost. If I had fallen at Rome the German troops at Salerno might have been cut off. The presence of Allied airborne near the Italian capital perhaps would have influenced the war in Italy decisively. You Americans were too cautious. The ripe fruit would have fallen into the hands of the Allies."

Around noon on the 8th of September the Allies devastated the command posts of Kesselring and von Richtofen at Frascati and Grottaferata. The accuracy of this bombing raid was greatly aided by the Italians' pinpointing of the key buildings for the Allied crews. And later that afternoon, shortly after radio broadcasts announced the capitulation of Italy, the U.S. Fifth Army landed at Salerno.

Student's paratroopers, unhampered by either the physical or psychological battle they would have fought if an American airborne division had been landed, instantly followed their alert plan and began disarming the Italian Army units in the Pontine Marsh area. After spotty resistance, and some serious fighting, they were successful.

Student on 9 September ordered Major Gericke's parachute battalion, which was securing the Foggia airfield, to jump northeast of Rome on Monte Rotondo, the hilltop fortress headquarters of the Italian high command. Although half of the battalion was dropped in the wrong area, Gericke seized the fortress and the command radio which controlled the entire Italian Army. The Italians counterattacked furiously with tanks later in the afternoon, but an armistice was arranged on the 10th.

At the same time the 2d Parachute Division fought its way up to the southern suburbs of Rome, only to be beaten back by the Sardinian Grenidire Division. By noon on the 10th of September a German counterattack had driven to the Colosseum. To the northwest of the capital the German 3d Panzer Division was fighting its way toward Rome. Finally, on the 11th of September, without ever really resisting within their capability (the Italian armored division "Contauro" near Rome with 40 brand new German Mark IV tanks never even moved) all Italian troops in Rome surrendered, thus preserving the critical German supply route to the south.

During this critical period at Frascati Student also was given by Hitler the additional mission of rescuing Mussolini from his Italian captors. The Duce was held prisoner in the resort Hotel Gran Sasso high in the Abruzzi mountain area. Student studied the problem of a rescue in such difficult terrain and finally decided on an audacious and imaginative glider attack and light plane rescue.

Resentful of the international publicity Otto Skorzeny later received for his minor part in the rescue of Mussolini, Student said, "This liberation of Mussolini was actually an interservice victory accomplished by the paratroopers and glider pilots of the 11th Air Corps. I planned the action myself and person-

After the liberation of Mussolini in September 1943 General Student and a member of his personal staff stand on the flat roof of the Hotel Gran Sasso, where the Duce was held prisoner.

ally briefed the glider pilots and the paratrooper company. I appointed Major Mors the task-force commander. Naturally, I wanted to accompany the troops personally, but the fighting around Rome at this time necessitated my presence at headquarters. The parachute company was commanded by Lieutenant Freiherr von Berlepsch. Because of the fluid situation in Italy at that time no one else knew of my plan, not even Hitler, Goering or Kesselring.

"The rescue occurred on the 12th of September. The company of paratroopers was assigned 10 gliders. They took off at 1300 hours and flew to this mighty mass of the Gran Sasso d'Italia. Around 1400 they were cut loose and made their precarious landings around the hotel. The Italians were so surprised by the attack that not a shot was fired. In a short while Mussolini was flown out from the Gran Sasso by Captain Gerlack in his Flieseler Storch.

"So you see that, historically, it is not true that Skorzeny was Mussolini's liberator. The glider pilots and paratroopers of my Parachute Corps deserve the credit. This Skorzeny was just a little wheel in the machinery of the liberation."

The Allies had again convinced Hitler of the value of airborne forces by their use of the 82d Airborne on Sicily. The Fuehrer gave the green light for the hurried activation of more airborne divisions. The 4th Parachute Division under Trettner, the 6th under Plocher, the 7th commanded by Erdmann, the 9th led by Braeuer and other airborne divisions were activated. But by now, of course, it was too late. Germany had lost the initiative. Essential air superiority was no longer a capability of the Luftwaffe. Transport aircraft were not available. So with a worsening situation on every front Hitler was forced to commit more and more of his airborne divisions in conventional ground operations until, at the

end, nothing but the name of airborne remained to perpetuate the myth of an airborne capability in the Luftwaffe. By 1944 six parachute divisions existed. By the end of the war 10 or 11 airborne divisions had been activated. These organizations, of course, were airborne or parachute in name only. At the most a small cadre, less than 10% or 20%, in these divisions received any sort of airborne training. What little training they did receive was generally inadequate, lacking heavy equipment and tactical problems. Although these later German airborne units fought tenaciously and well in many battles from Monte Cassino to the Ardennes, a study of these battles is not properly a portion of the history of the German airborne because they were primarily conventional ground actions. Periodically, small units, generally of battalion size or less, were transported in the role of mobile reserves and either parachuted or air-landed into critical areas, such as the air reinforcement of surrounded Breslau by an understrength battalion. But once Hitler began to fritter away his airborne troops in a conventional ground combat role they were incapable of many of the strategic missions that Student had hoped for, such as in Russia in conjunction with Thoma's panzers, or against the Normandy landings.

And so it was that on the 17th of September 1944, Student stood on that roof in Holland and watched the First Allied Airborne Army drop around him. He could not help but professionally admire and envy the growth of the Allied airborne. In his own indirect way he had most certainly played a catalytic role in its formation.

The last German airborne operation of World War II was in the Ardennes toward the end of December 1944. General Student decorates the troopers who took part in that action.

CHECKLISTS for Infantry leaders

This is the fourth in The Infantry School's series of checklists for small-unit leaders. We repeat our word of caution on checklists. They are not inflexible rules but guides that should be modified to fit the situation. Use them to check your thinking and free your mind for other considerations.—Editor.

WEAPONS UNITS IN ATTACK

Weapons Platoon Leader

1. On receipt of the attack warning order from the company commander—
   a. Issues the necessary instructions to his platoon sergeant to prepare the platoon for the attack.
   b. Arranges for personnel to accompany him to receive the order.
   c. Goes with the company commander to where the battalion attack order will be issued.
2. After receiving the attack order from the battalion commander—
   Assists the company commander in the development of the company plan of attack—
   (1) Making recommendations on the employment of the weapons platoon while the company commander is developing his preliminary plan of attack.
   (2) Assisting the company commander in organizing coordination with supporting units.
   (3) Going with the company commander on his reconnaissance or making a separate reconnaissance of all or a portion of the company zone of action.
   (4) Making additional recommendations based upon his reconnaissance.
3. After receiving the company attack order sends a warning order to his platoon by messenger and orders the platoon to move to position areas for designated squads to be attached to designated rifle platoons.

4. Initiates his own troop-leading steps as follows—

a. Begins planning—

(1) Determines the time for issuing the platoon attack order, basing this decision on the time available.

(2) Makes a quick estimate of the situation and a preliminary plan based upon his reconnaissance with the company commander.

b. Arranges for—

(1) Section leaders to receive the attack order by announcing when and where it will be issued.

(2) A detailed reconnaissance to select observation posts, targets, concentrations, subsequent position areas and routes of displacement forward if time permits.

(3) The selection of initial position areas if he failed to select them while with the company commander.

(4) Coordination with the rifle platoon leaders and other supporting units such as the 81mm mortar platoon, the heavy mortar platoon and the artillery.

c. Makes a detailed reconnaissance—changes preliminary plan if necessary.

d. Completes his plan by deciding—

(1) Method of tactical employment of the sections.

(2) Initial position areas for the weapons.

(3) Location of observation posts.

(4) Targets and concentrations.

(5) Method of communicating with section leaders and forward observers.

(6) Subsequent position areas designed to support the attack before it reaches the objective.

(7) Plan of displacement forward including routes.

(8) Plan for reorganization and consolidation.

e. Completes his final coordination.

f. Issues the platoon attack order preceded by a terrain orientation.

g. Supervises the preparations for the attack, the troop-leading steps of the section leaders, and the conduct of the attack.

5. Takes the following steps to supervise actions of weapons in general support during conduct of the attack—

a. Prior to H-hour—

(1) Goes with the company commander to the company observation post.

(2) Supervises the work of his own mortar observers while they are registering on concentrations and firing on targets.

b. While the rifle platoons are moving between the line of departure and the assault positions—

(1) Assists company commander in coordinating available fire support.

(2) Gives target designations to the 60mm mortar observer and 57-mm rifle gunners and informs them of targets designated by the company commander.

(3) Insures that the platoon sergeant is keeping the ammunition supply adequate.

(4) Assists the company commander in phasing out, lifting and shifting all fire support as the rifle platoons begin their assault.

c. During the assault—

(1) Assists the company commander in coordinating all available fire support.

(2) Anticipates the masking of the fires of his own platoon and issues timely orders concerning displacement to subsequent position areas.

(3) Moves forward with the company commander as the observation post is displaced.

d. During reorganization and consolidation—

(1) Confirms prior instructions on the placement of weapons and observation posts.

(2) Receives reports from the section leaders on the status of the men and equipment.

(3) Consolidates the status reports and makes a simliar report to the company commander.

(4) Checks all weapons positions and observation posts.

(5) Makes preparations to continue the attack including—

(a) Observing to the front in an effort to learn more of the terrain and enemy situation.

(b) Issuing warning orders.

(c) Requesting additional ammunition and equipment from the company commander.

Weapons Squad Leader

1. After receiving the attack warning order from the platoon leader—

a. Inspects weapons for cleanliness, functioning, headspace adjustment, proper functioning of sights and completeness of accessories.

b. Inspects equipment including web equipment, aid packet and canteen.

c. Insures that ammunition for crew-served and individual weapons is clean and that crew-served ammunition is properly boxed.

d. Checks the physical well-being of his men, bringing to the platoon leader's attention any man he thinks physically unable to make the attack.

2. After receiving platoon attack order—

a. Asks questions on the terrain orientation if necessary.

b. Takes notes of the platoon's mission and how his squad is to be employed in accomplishing that mission.

c. Asks questions to insure that he fully understands the platoon order.

d. Completes the following troop-leading steps—

(1) Determines the amount of time available to plan his reconnaissance and to prepare and issue his order.

(2) Makes his reconnaissance, during which he—

(a) Observes the ground to be used by the maneuver element.

(b) Notes prominent landmarks.

(c) Selects firing positions on or near the LD if platoon attack order specifies.

(d) Selects tentative firing-position areas along the route.

(e) Selects routes into position and forward during displacement.

(f) Notes possible danger areas.

(g) Decides on actions to cross danger areas.

(3) Coordinates with other squad leaders.

(4) Prepares his order.

(5) Issues the squad attack order—

(a) Precedes the order with a terrain orientation using a sketch or map.

(b) Makes certain each man understands the order and the plan by asking questions.

(6) Supervises the squad's preparations for the attack.

3. Conduct of the attack—

a. From the assembly area to the attack position—

(1) Makes sure squad members are in their specified position in the order of march or, if they ride, on the proper vehicle.

(2) Checks to see that the squad retains equipment and ammunition.

b. In the attack position—

(1) Makes last-minute coordination with platoon leader.

(2) Performs last-minute check with members of squad.

(3) Looks to the platoon leader to receive signal to move out.

(4) If the LMGs are going along with maneuver element, makes sure they are in the proper formation and proper place within the platoon formation.

(5) If the LMGs are going to support initially from LD or near LD—supervises the placing of LMGs into predetermined positions.

c. From LD to the assault position—

(1) If the LMGs accompany the maneuver element makes sure they are ready to go into action if the platoon leader asks for them.

(2) Picks out firing positions along route and sets up the LMGs to provide close fire support.

(3) Supervises the displacement of the LMGs.

(4) If they are used on or near the LD supervises their going into position, displacement and routes forward.

d. During the assault—

(1) Makes certain that both guns are in position to provide close fire support for the platoons during the assault.

(2) Displaces the guns forward by team echelon.

(3) Goes with the first gun to locate its position and the position of the second gun when it gets on the objective.

4. During the reorganization and consolidation—

a. Informs the platoon of any need for modification in the original plan.

b. Gives each gun a sector of fire.

c. Submits a status report to the platoon leader containing the following information—

(1) Ammunition needs.

(2) Casualties.

(3) Weapons and equipment needs.

d. Supervises the improvement of the defenses according to work priorities.

Antitank Platoon Leader

1. When notified to meet company commander to receive the reconnaissance order—

a. Notifies personnel to accompany him on reconnaissance.

b. Alerts the platoon to begin preparing for the attack.

2. After receiving the reconnaissance order—

a. Plans the time available for reconnaissance.

b. Plans his reconnaissance by—

(1) Studying the terrain from a map, sketch or aerial photo, looking for—

(a) Section firing-position areas.

(b) Routes for displacement.

(c) Avenues of enemy armor approach.

(d) Method of utilization.

(2) Making an estimate of the situation.

c. Arranges to move his unit (where, when, how).

d. Makes his reconnaissance (selects route, time schedule, persons to take along, and decides how to use subordinates).

3. While on reconnaissance prepares recommendations for the company commander considering the following factors:

a. Method of utilization—

(1) Does an armored threat exist?

(2) Can the platoon cover the armored approaches into the battalion zone of action?

(3) Can the platoon mass fires on the initial objective and on critical terrain within the battalion zone of action?

(4) Can the battalion commander control the fires of the platoon?
(5) Is decentralization of control desired to the point of requiring direct support or attachment?

b. Selection of firing-position areas for each section—
(1) Fields of fire.
(2) Observation.
(3) Cover and concealment.
(4) Routes into position and routes forward for displacement.
(5) Room for dispersion.
(6) Security.
(7) Alternate and supplementary positions.
(8) Routes of ammunition resupply.

c. Plan for displacement—
(1) How?
(a) The entire platoon? (rarely)
(b) Two sections followed by one?
(c) One section followed by two?
(d) One section at a time?
(e) Squad echelon?
(2) When?
(a) Fires are masked?
(b) The supported unit moves beyond effective supporting range?
(c) There is incoming enemy fire? (to alternate positions)
(d) Smoke or dust obscure observation?
(3) Where? (Positions on or near the objective?)
(4) What is the condition of the routes forward?
(5) Will the platoon leader accompany the lead echelon?

4. After his reconnaissance arranges for—
a. Issuing the platoon attack order (when, where, to whom).
b. Coordination with leaders of other supporting and supported units.

5. After receiving the heavy weapons company attack order—
a. Completes his plan for supporting the attack.
b. Completes his reconnaissance.
c. Prepares his order.
d. Issues the platoon attack order to key personnel and includes the—
(1) Method of utilization for each section.
(2) Section firing-position areas.
(3) Principal direction of fire for each section.
(4) Fire-control instructions—
(a) Scheduled fires.
(b) Priority of targets.
(5) Displacement instructions (how, when, and where).
(6) Plan for ammunition supply.
(7) Limitations imposed by ammunition supply.

6. During the conduct of the attack—
a. Locates himself where he can best control his platoon.
b. Maintains contact with the heavy weapons company commander.
c. Supervises the platoon's—
(1) Conduct of fire.
(2) Ammunition resupply.
(3) Displacement.

7. After the attack—
a. Supports the rifle companies in consolidating the objective.
b. Reorganizes the platoon as necessary.
c. Prepares to support the continuation of the attack or to defend the objective area.
d. Reports his actions to the heavy weapons company commander.

81mm Mortar Platoon Leader

1. When notified to meet the company commander to receive the reconnaissance order—
a. Notifies personnel to accompany him on reconnaissance.
b. Alerts the platoon to begin preparing for the attack.

2. After receiving reconnaissance order—

a. Plans the time available for reconnaissance.

b. Plans his reconnaissance by—

(1) Studying the terrain from a map, sketch or aerial photo, looking for—

(a) Firing-position areas.

(b) Routes for displacement.

(c) Method of utilization.

(d) Platoon observation post.

(2) Making an estimate of the situation.

c. Arranges to move the unit (where, when, how).

d. Makes his reconnaissance (selects routes, time schedules, persons to take along, and decides how to use subordinates).

3. While on reconnaissance prepares recommendations for the company commander considering the following factors—

a. Method of utilization—

(1) Can the platoon mass fires on the major portion of the initial objective(s) and critical terrain in its zone?

(2) Can the battalion commander effectively control the fires of the platoon?

(3) Can the platoon mass its fires on only a portion of the initial objective(s) and critical terrain in the zone?

(4) Can the mortar-unit leader best control the fires?

(5) Is decentralization of control desired to the point of requiring attachment?

b. Selection of firing positions—

(1) Defilade.

(2) Located near the center of the zone.

(3) Within effective close supporting range of the initial objective.

(4) At or beyond the minimum range from the line of departure.

(5) Mask and overhead clearance.

(6) Good routes into and forward of the position.

(7) Room for dispersion.

(8) Security.

(9) Alternate and supplementary positions.

(10) Routes of ammunition resupply.

c. Plan for displacement—

(1) How?

(a) The entire platoon? (rarely)

(b) Two sections followed by one?

(c) One section followed by two?

(d) One section at a time?

(e) Vehicle or hand carry?

(2) When?

(a) The supported units move beyond or are nearing maximum effective close-supporting range?

(b) After rifle companies complete the reorganization and consolidation of objectives?

(3) Where? (Previously selected position areas?)

(4) What is the condition of the routes forward?

(5) Will the platoon leader accompany the lead echelon?

d. Platoon OP location—

(1) Is there good observation of the battalion zone?

(2) Is there cover and concealment?

(3) Is it near the battalion OP?

(4) Does it supplement the observation of the forward observers?

4. After his reconnaissance arranges for—

a. Issuing the platoon attack order (when, where, to whom).

b. Coordination with leaders of other supporting and supported units.

5. After receiving the heavy weapons company attack order—

a. Completes his plan for supporting the attack.

b. Assigns final forward observation parties to the rifle companies.

c. Completes his reconnaissance.

d. Prepares his order.

c. Issues his platoon attack order to key personnel and includes the—
(1) Method of utilization for each section.
(2) Firing-position areas.
(3) Targets.
(4) Fire-control instructions—
(a) Base-point registration.
(b) Location of the platoon fire direction center.
(c) Registration of concentrations.
(d) Scheduled and on-call fires.
(5) Displacement instructions (how, when, where).
(6) Plan for ammunition resupply.
(7) Limitations imposed by ammunition supply.

6. During the conduct of the attack—
a. Locates himself where he can best control his platoon.
b. Maintains contact with the heavy weapons company commander.
c. Supervises the platoon's—
(1) Conduct of fire.
(2) Ammunition resupply.
(3) Displacement.

7. After the attack—
a. Assists the rifle companies in consolidating the objective.
b. Reorganizes the platoon as necessary.
c. Prepares to support the continuation of the attack or defense of objective areas.
d. Reports his actions to the heavy weapons company commander.

Machinegun Platoon Leader

1. When notified to meet the company commander to receive the reconnaissance order—
a. Notifies personnel to accompany him on reconnaissance.
b. Alerts the platoon to begin preparing for the attack.

2. After receiving reconnaissance order—
a. Plans the time available for reconnaissance.
b. Plans his reconnaissance by—
(1) Studying the terrain from a map, sketch or aerial photo, looking for—
(a) Section firing-position areas.
(b) Routes for displacement.
(c) Methods of utilization.
(2) Making an estimate of the situation.
c. Arranges to move the unit (where, when, how).
d. Makes his reconnaissance (selects route, time schedule, persons to take along, and decides on how to use subordinates).

3. While on reconnaissance prepares recommendations for the company commander including the following considerations—
a. Method of utilization—
(1) Can the platoon mass fires on the major portion of initial objective(s) and critical terrain in its zone?
(2) Can the battalion commander effectively control the fires of the platoon?
(3) Can the platoon mass fires on only a portion of the battalion zone?
(4) Can the machinegun-unit leader best control the fires?
(5) Is decentralization of control desired to the point of requiring attachments?
b. Selection of firing-position areas for each section—
(1) Fields of fire.
(2) Observation.
(3) Cover and concealment.
(4) Routes into position and routes forward for displacement.
(5) Room for dispersion.
(6) Security.
(7) Alternate and supplementary positions.
(8) Routes of ammunition resupply.

c. Plan for displacement—
(1) How?
(a) The entire platoon? (rarely)
(b) Section or squad echelon?
(c) Vehicle or hand carry?
(2) When?
(a) Fires are masked?
(b) The supported unit moves beyond supporting range?
(c) There is incoming enemy fire? (For displacement to alternate positions only.)
(d) Smoke and dust obscure observation?
(3) Where? (Position on or near the objective?)
(4) What is the condition of the routes forward?
(5) Will the platoon leader accompany the lead echelon?

4. After reconnaissance arranges for—
a. Issuing the platoon attack order.
b. Coordinating with leaders of other supporting and supported units.

5. After receiving the heavy weapons company attack order—
a. Completes the plan for supporting the attack.
b. Completes his reconnaissance.
c. Prepares his order.
d. Issues the platoon attack order to key personnel and includes the—
(1) Method of utilization for each section.
(2) Section firing-position areas.
(3) Target designations.
(4) Fire-control instructions—
(a) Scheduled fires.
(b) Targets of opportunity.
(5) Displacement instructions (how, when, where).
(6) Plan for ammunition resupply.
(7) Limitations imposed by ammunition supply.

6. During the conduct of the attack—
a. Locates himself where he can best control his platoon.
b. Maintains contact with the heavy weapons company commander.
c. Supervises the platoon's—
(1) Conduct of fire.
(2) Ammunition resupply.
(3) Displacement.

7. After the attack—
a. Supports the rifle companies in consolidating the objective.
b. Reorganizes the platoon as necessary.
c. Prepares either to support the continuation of the attack or to defend the objective area.
d. Reports his actions to the heavy weapons company commander.

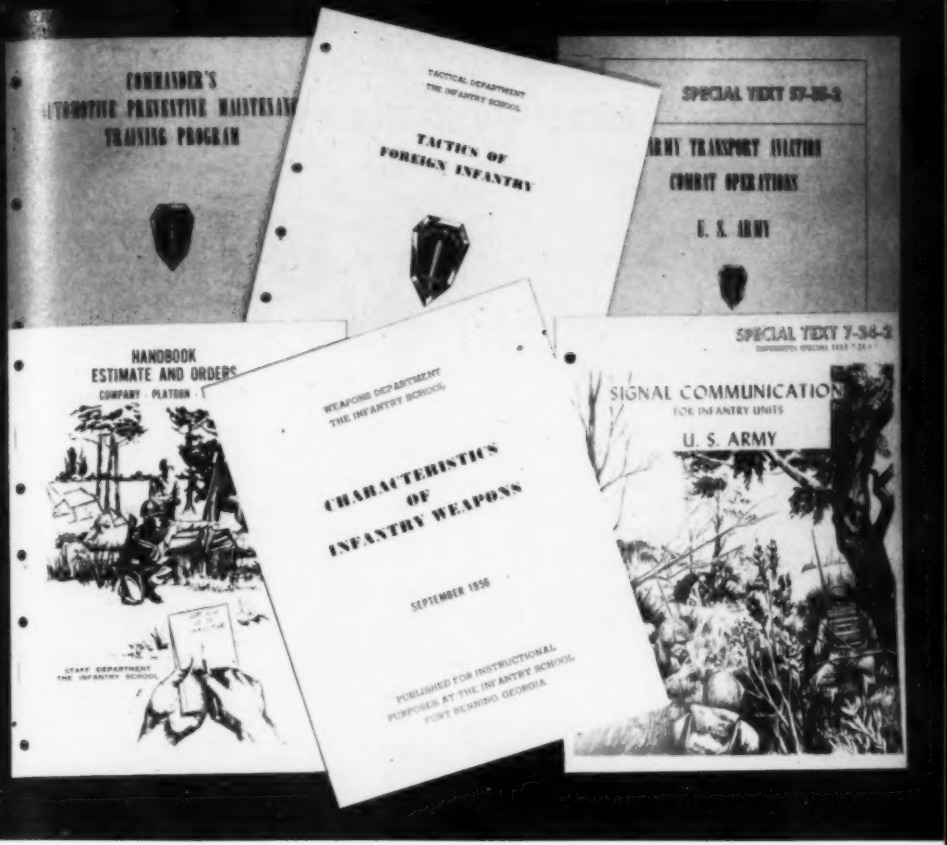
Why a Rifleman in the Atomic Age?

The age of atomic warfare is here; it cannot be ignored; it must admittedly govern both the design of our equipment and the development of our tactics.

Even accepting the possibility of mass atomic exchanges in war, we must still return to basic principles if we hope to win the war. There will come a time after such exchanges when someone will surely conclude that the only way to end the destruction will be to seize the source of the enemy's atomic strength.

There is where the Infantryman comes back on the scene, together with his weapons and the science of transport and supply. In the Marine Corps we recognize the inevitability of this cycle, this ever-constant return to basic principles. . . .

GENERAL LEMUEL C. SHEPHERD, JR.,
FORMER COMMANDANT OF THE MARINE CORPS



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ANSWERS TO QUARTERLY QUIZ

Possible score 100 points, expert 90-100, sharpshooter 70-80, marksman 50-60, recruit 30-40 and bolo 0-20. For detailed discussion of the answers check the references listed.

1. Battalion commanders and commanders of higher echelons have authority to employ protective minefields. This authority may be delegated not lower than to a company commander.

Regimental commanders and commanders of higher echelons have the authority to employ defensive minefields. This authority may be delegated not lower than battalion commanders.

Division commanders and commanders of higher echelons have authority to employ barrier minefields.

Army and higher commanders have the authority to employ nuisance minefields. This authority may be delegated not lower than division commanders.

A phony minefield may be employed by any commander who has the authority to employ the type of minefield simulated. (Chap. 10, Par. 90c, 91c, 92c, 93c, 94c, FM 20-32, July 1955. For a detailed discussion of minefields, see "Barriers," page ....)

2. Those personnel whose primary duties are in kitchens, supply, maintenance and headquarters are near the weapons and are assigned additional duties as crew members for all .50-caliber machineguns in the Infantry regiment. (For a complete list of these personnel, see Change 1, FM 23-65, May 1956.)

3. **d.** The enemy can intercept any radio message and locate any radio transmitter. Even when messages are encrypted, the enemy gets useful information from traffic analysis of amount of traffic, length of messages, precedence of messages, and routing and relay instructions. To limit enemy interception—use the least power necessary to maintain good communication. To prevent accurate direction finding—make your transmission short. (Chap. 4, Sec. VI, Par. 78, FM 24-18, December 1949.)

4. The commander of an air-landed force is responsible for the conduct of the air movement of his forces. He uses a movement control center, pathfinders when available, and the personnel and facilities of the supporting transport aviation unit to help control the movement. The commander of the supporting transport aviation unit advises and assists him, maintaining communication with the movement column (serials and flights) and transmitting movement instructions as required. (Chap. 5, Sec. III, Par. 93, Infantry School Special Text 57-35-2, October 1956.) This information has been incorporated in FM 57-35, a new manual which has been approved by CONARC and forwarded to the Government Printing Office for printing.

5. **b.** Tabulated data, Chap. 1, Sec. II, Par. 6a, TM 9-772A, April 1952.

6. Place luminous tape on the palm of the hand or use the luminous dial of a compass. Individuals whose eyes are accustomed to the darkness can see the adhesive tape at distances up to 100 yards, the compass up to 75 yards. The exact distance depends on the darkness of the night and how much illumination has been absorbed. If the compass or tape are exposed to any light source for several hours they will remain luminous all night. A piece of tape can be used for

months and retains its luminosity even after being soaked repeatedly in water. (Tip taught by the Ranger Department, TIS, during its patrolling instruction.)

7. Yes. Remove insignia, shoulder patches and distinguishing marks from your uniform. You must be as inconspicuous as possible but it is important to keep some form of military identification to prove that you are a combat soldier and not a spy—your dogtags or identification card will do. (Sec. 1, Par. 9e(4), DA Pamphlet 21-46, "Behind Enemy Lines," October 1951.)

8. One reconnaissance helicopter is organic to each Infantry regiment. Three are assigned to division headquarters, two to division signal company, one to division artillery and one to division engineer battalion. (TOE 7R, February 1955.)

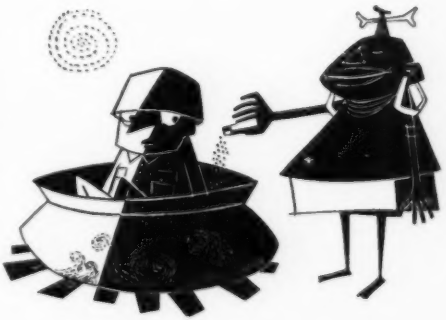
9. In an atomic conflict, passive defensive measures assume increased importance. Dispersion, barriers, camouflage, concealment, and construction of dummy positions are of value in slowing the enemy. Such measures also can lead the enemy into expending atomic weapons or using other offensive measures against positions which are not occupied or are occupied by light forces. All positions are dug in as deeply as the terrain permits. Underground shelters are provided whenever possible. All emplacements provide, as a minimum, overhead cover for protection against thermal and nuclear radiation. (Chap. 2, Sec. I, Par. 6b, Infantry School Reference Material, Tactics, Infantry Regiment, April 1956.)[1]

10. The penetration. Because of the wide area of damage caused by atomic explosions, the penetration will be a more desirable form of maneuver than heretofore. (Chap. 1, Sec. IX, Par. 3i, Infantry School Reference Material, Tactics, Infantry Regiment, April 1956.)

[1]This material has not yet been incorporated in field manuals. The Infantry School reference may be obtained from the Book Department, Ft. Benning, Ga.

IN A STEW . . .

because you haven't received your *Infantry School Quarterly?* We try to keep up with you anywhere in the world. At times you are hard to follow. It boils down to this. When you make a move send us a change of address. Write: Infantry School Quarterly, Book Dept., TIS, Ft. Benning, Ga.



A misguided vehicle is a lethal weapon. We must select our drivers carefully and teach them to operate the 346 wheeled vehicles in the Infantry regiment more efficiently and with fewer accidents.

The truck driver signalled for a left turn. The sergeant in the jeep jammed his foot down on the accelerator, trying to pass the truck before it reached the intersection some distance down the road. But as he started around, the truck began to move to the left side of the road. In the crash that followed, the jeep driver was seriously injured. His passenger was killed. The radiator, engine and right side of his vehicle were damaged beyond repair and the left side of the truck was so badly smashed that it was deadlined for a week.

MISGUIDED MISSILE

A brand new M-series 2½-ton truck was travelling north along an open road in Korea. Ahead was one of the numerous one-way bridges that dot the highway between Seoul and Uijongbu. A ¾-ton truck was headed south. Each driver tried to beat the other to the bridge. It was a draw. The truck driver, to avoid a head-on collision, cut his wheels toward a rice paddie. He hit the bridge abutment and rolled over. Result: death and the loss of an important truck — a truck that had travelled from a factory half way around the world to come to this senseless and untimely end.

By Maj

James H. Noonan

In these two incidents all drivers were at fault. Their poor driving converted their vehicles into lethal weapons.

Too many of our vehicle operators have similar accidents every day. Most of these could be avoided if our drivers were carefully selected and had the comprehensive training needed to operate army vehicles.

Automotive mishaps cause death or injury to personnel, damage to vehicles and, most important, deprive a unit of the transportation it needs to accomplish its mission. In combat, an accident caused by driver ignorance or carelessness could mean the difference between a unit's success or failure.

At the present time, our combat units, the Infantry regiments, have no standard combat-driver-training programs. Such training — covering situations which a driver may meet in a combat zone — is especially important now that our tactics are stressing dispersion and mobility. Vehicles must be kept operative at all times.

Another important reason for having such a program is this: Many of the 250 truck drivers in the regiment do not have a driver's MOS. Although these drivers have been trained for some other job, they are serving as full- or part-time vehicle operators in connection with primary duties. True, these men are considered qualified under current regulations if they have passed the mental and physical evaluations and road tests outlined in AR 600-55. Some of them will turn out to be proficient highway — or even combat — drivers. Many will not. Only a well-planned training program such as that outlined below, will *insure* a unit of consistently good performance from its drivers.

Before considering the driver-training program, however, let's look at the driver. How is he chosen? What qualifications should he have? Even the best training will not transform a fundamentally poor prospect into a good vehicle operator. Some commanders view the motor officer's request for drivers as an open invitation to unload all the misfits in the unit — especially if they've had the slightest driving experience. Under such conditions, the probability of accidents is increased at the very outset. Usually a look at a man's records will tell a commander whether the soldier is suited for this type of work.

If the man's background indicates he is capable of becoming a good driver, he should be interviewed with an eye to discovering the following traits:

1. Proper mental attitude and excellent physical condition.
2. Ability to read and interpret signs, signals and road markers.
3. Alertness.
4. Stability.

After determining a prospect's basic qualifications the commander can get further guidance by consulting AR 600-55, "Motor Vehicle Driver Selection,

BATTERY I TESTS

Driver Know-How Test: DA PRT 2609

Attention to Detail Test: DA PRT 2613

Army Self-Description Test: DA PRT 2612

BATTERY II TESTS

Emergency Judgment Test: DA PRT 2623

Visual Judgment Test: DA PRT 2610

Two-Hand Coordination Test: DA PRT 2617

SUPPLEMENTARY PHYSICAL TEST

Visual Acuity • Depth Perception

Field of Vision • Color Perception

Visual-Reaction Time • Hearing

Figure 1.

Highway signs are good drivers' guides for safe travel.

Testing and Licensing"; TM 21-300, "Driver Selection and Training"; TM 21-305, "Driver's Manual" and AR 385-55, "Safety." Let's take a brief look at how these directives provide the information needed for driver selection.

First of all the individual's attitudes and capabilities are determined long before he comes under your consideration. At the induction center, each man is given Battery I and Battery II tests, (see Figure 1) the scores of which are included in his service records. On the basis of these recorded scores, plus an interview guided by the information you have found in the manuals listed above you can fully evaluate the man's potentials.

Battery I tests are indicative only of the capability to learn to drive, just as the Armed Forces Qualification Test is indicative of an inductee's capability to adapt himself to learning situations.

Battery II tests help detect persons prone to poor driving because of mental or physical flaws. A driver's physical condition and mental attitude largely determine his susceptability to accidents. Statistics of law-enforcement agencies and insurance companies show that faulty drivers — and not faulty vehicles — cause 95% of all accidents. Ten percent of all fatal accidents are caused by drivers with some physical defect, while more than 50% involve violations of traffic regulations.

These tests, required by AR 600-55 and found in their complete form in DA PRT 2676, will point out unsuitable individuals before a unit wastes time and effort in training them as drivers and before they show their lack of ability by damaging valuable equipment.

When the tactical unit has picked good potential drivers, the next step is training them to be good *combat* drivers. Vehicle operators in a combat unit must be experts in safe convoy operations, night driving, driving over difficult roads and cross-country movement into bivouac areas, blackout driving beyond light lines

Training must develop the coordination needed for stopping and starting on steep hills.

in combat areas and field-expedient methods of repairing disabled equipment. The program outlined below was developed by the Automotive Department, The Infantry School, to carry out the recommendations of TM 21-300, which contains additional information on combat-driver training.

Since success or failure in battle may depend heavily on capable drivers, they must be able to do more than just start, steer and stop their vehicles. Knowledge of maintenance, map reading, vehicle-recovery techniques, loading and lashing of cargo also contribute to a driver's over-all ability to keep his truck moving.

Because specific course material and hours should be flexible enough to suit a unit's needs, a 70-to-130-hour program is suggested. In implementing this program, it may be necessary to put drivers on part-time training and part-time duty. Under ideal conditions, a unit may be able to carry out full-time training for a number of drivers. Regardless of modifications, the program should be all-inclusive; all recommended subjects should be covered and all new drivers should take the training. Experienced drivers should go through the entire program or an abbreviated version of it for refresher training.

While many factors will influence any program, driver training should be carried out in five phases. If time permits, miscellaneous subjects and an examination (in addition to continual observation and evaluation during instruction) can be given at the end of the course. Subjects should be covered, as far as possible, in the following logical sequence:

1. Preliminary nonmechanical training (8 to 15 hours) teaches the basic subjects an army driver needs as background knowledge for his assignment. Some of these are basic rules and regulations, safety precautions, signals, method of completing driver records, elementary map reading, and an introduction to the standard procedures governing the dispatch, control and maintenance of motor vehicles. This phase may profitably be used as a review for experienced drivers.

2. Preliminary mechanical training (30 to 59 hours) develops general knowledge of nomenclature, vehicle characteristics and functioning of component parts. In the 130-hour program certain subjects of this phase are presented in greater detail, on the theory that fuller understanding of equipment promotes better driver care and maintenance of his vehicle. This instruction stresses repair of

faulty equipment, effects of malpractices and proper methods of operation. Operation under unusual conditions and special precautionary measures also are included.

3. Basic driving (10 to 16 hours) teaches new drivers how to operate army vehicles over relatively easy driving terrain. Practical work involves starting, driving on a level area, stopping, backing and parking. Day and night driving are included in this phase. While developing good practices in new drivers, this part of the program also may be used as refresher training to detect and eliminate bad driving habits of other drivers.

4. Road and convoy driving (12 to 24 hours) stresses the importance and characteristics of proper convoy operations. Students learn about organization, control and types of convoy movements. They drive over courses which present situations requiring a wide variety of decisions and actions. Day and night movements demand a knowledge of vehicle-performance characteristics and general safety practices.

5. Cross-country driving (10 to 16 hours) acquaints the driver with various situations and hazards encountered in driving off the highway. A series of difficult problems over different courses requires the driver to use initiative and ingenuity for successful safe transit.

If time is available, drivers may receive instruction in a sixth phase. This additional training would cover miscellaneous subjects such as amphibious landings, river crossings, desert operations, operations in extreme cold, etc. Instruction in this phase would be limited to the special driving conditions likely to be met by the particular unit. This would be a good time to review difficult matter covered during the regular five-phase program.

As an additional check on a driver's ability and the knowledge he has gained during training, an all-inclusive exami-

Movable narrow-lane markers are used to test driving ability.

nation can be scheduled at the end of the course. No specific time is allotted in the subject schedule for formal examinations — continuous testing of driver performance is built into the course.

Copies of the detailed schedule for this driver, training program can be obtained from the Publications Section, Publications and Visual Aids Office, The Infantry School, Fort Benning, Georgia. The schedule lists each hour of the course, tells what material should be covered in each lesson, lists training aids for each hour and gives specific references to pertinent manuals and regulations. The schedule also is included in the Commander's Automotive Preventive Maintenance Training Program, available from The Book Department, The Infantry School.

Had the drivers been carefully selected and the above program used by the units dispatching the vehicles mentioned at the beginning of this article, the accidents probably would not have happened. Units without such a program might profitably undertake one in accordance with the above outline.

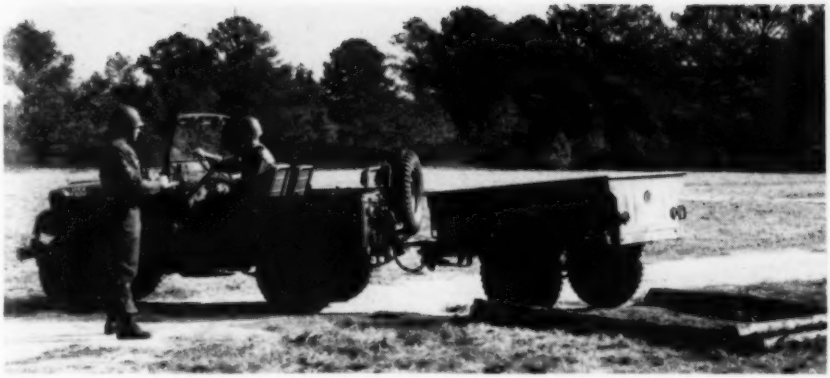
By now, many of you are asking who will conduct such training or when a unit can squeeze it in? Normally, daily driving and maintenance commitments require all the working time of all personnel in the motor pool. How can a unit set up a training program in addition to these other activities?

Any training program for unit drivers can be sustained only by constant command effort. Such a program requires concessions of one type or another — an individual cannot be training and driving on a dispatched job at the same time.

After qualifying under the provisions of AR 600-55, a newly assigned driver may spend part of his weekly time in training to develop the professional knowledge and skill needed for efficient combat driving. A typical program may call for devoting half a day each week (for instance, Wednesday afternoons) to driver training. Only essential transportation, approved specifically by the regimental S4, would be dispatched during that period. More experienced drivers can perform the minimum dispatch missions while all others report for training. Experienced drivers can be rotated on the essential missions on Wednesday afternoons. If such drivers have gained their experience through actual field work with little classroom instruction, maximum participation would prove worthwhile for them.

With this half-day schedule, instruction would last 18 to 33 weeks, depending on the amount of time (70 to 130

Training combat drivers to cross trenches and deep ditches on log field expedients.



Practice is required to develop skill in maneuvering and parking trailers.

hours) the unit decides to devote to the program. Instruction could be speeded up by setting aside a full training day each week, if possible.

Instructors might come from motor-pool personnel who have considerable motor-vehicle operational experience. In some cases personnel with transportation operating experience may be available within the regiment to assist for short periods in the driver-training program. However, unit motor personnel can rightly expect to shoulder a good share of the instructional burden. A solution to the problem is to rotate instructional assignments among the maintenance force, section chiefs and experienced drivers under the direction of the assistant regimental motor officer. This will avoid placing an undue burden on any one person or interfering with everyday work schedules. A four-hour period requires at most four principal instructors, each carrying one hour of teaching.

Whatever the arrangement, it will unquestionably require careful planning and coordination. The unit will profit from its driver-training program in direct proportion to the vigorous efforts made by instructors and students. And remember, without proper command support and supervision the entire program will be a fruitless undertaking.

In the long run, adequate selection and training will save many trucks and personnel. The "accidents that didn't happen" will pay large dividends when the efficiency of a unit's transportation means the difference between success or failure in a combat situation.

MAJ JAMES H. NOONAN, JR. received an OC commission at Camp Davis, North Carolina, and in 1943 completed the basic course at The Infantry School before embarking for Europe in World War II. He served with a training depot in Italy for one year and then was assigned as executive officer, Headquarters and Headquarters Company, U.S. Forces Austria. Returning to the United States in 1947, Maj Noonan was a motor transportation officer at Fort Lawton and later commanded a military police detachment at that post. During the same period he also completed the highway transportation officer's course at Fort Eustis. After a tour as an ROTC instructor at the University of Washington, Maj Noonan went to Korea where he was S1, 27th Infantry Regiment, and helped in planning nine regimental motor marches ranging in distance from 15 to 82 miles. He began his present assignment as an instructor in the Automotive Department, The Infantry School in 1954.

LETTERS *(continued from page 5)*

those who work with Infantry at the regimental level and below. When noncommissioned officers in the smaller units tell us they find Quarterly *material useful we are reassured that the* Quarterly *in on the right track.—Editor*

Unique Service

Sir:

I am a writer in the Tactical Division, The Signal Corps Publications Agency, Fort Monmouth, New Jersey. The July 1956 issue of the *Infantry School Quarterly* has just crossed my desk in routine circulation.

For some time, I have felt I should subscribe to the *Quarterly*. As a civilian and a woman, I have no military background, and the *Quarterly* is an invaluable source of all phases of military science. If I had my own copy to read on my own time, I am sure I could absorb much more of its information on current concepts and implications for future developments. Thus, I would be more qualified in my profession of preparing literature for the training of our armed forces.

Since your note at the end of Mrs. Hall's letter in the July issue stated that you receive few letters "from a feminine reader" I am tempted to mention one more value to be derived from the *Quarterly*. As a woman and a civilian with a vote, I feel I have an unusual privilege in being associated with the military establishment and able to become aware of the defense needs of our great nation. In this respect, the *Quarterly* will be a unique extracurricular activity. It is a pity that more civilians and more women do not know about your valuable service.

I am enclosing $2.50 for one year's subscription.

Miss Anne M. Stommel
Rumson, New Jersey

We were pleased to learn of this additional area in which the Quarterly *can be helpful. It is reassuring to know that among the many civilian women who work with us in the defense of our country there are those, like yourself, who seek every possible means of improving their professional ability to serve—even at their own expense.—Editor*

Trainfire Reconsidered

Sir:

As a professional Marine, I have followed the subject of rifle marksmanship with interest for a good many years. I feel some protest should be made in view of the article "Trainfire," January 1956 *Infantry School Quarterly*, which bore a form of official command approval, and a similar article which appeared the following March in the *American Rifleman*. It is my opinion that these articles do not state the case in a true light.

The Quarterly article began: "experience has shown . . . that the rifle—the basic weapon of the U.S. Army—has been used with lessening effectiveness in combat. As late as the Korean conflict, many of our Infantrymen lacked sufficient skill in the delivery of accurate aimed rifle fire."

I take this statement to mean that because our men were not trained to shoot their weapons more accurately, they were found wanting. However, S.L.A. Marshall has given us overwhelming proof of the real reason for our ineffectiveness with rifle fire in combat. In *Men Against Fire*, Marshall tells us: "When he engages the enemy not more than one quarter of his men will ever strike a real blow unless compelled by almost overwhelming circumstances . . . The 25% estimate stands even for well-trained and campaign-seasoned troops."

Now even the most doubtful *cannot* say that 75% of our men in Korea

lacked "sufficient skill" to deliver accurate fire. The truth is, I feel, that many of our men simply *did not fire* their weapons—regardless of whether or not they could have been accurate.

Marshall has not changed his mind since Korea about our hesitancy to fire in combat. In *The River and the Gauntlet,* he shows that our problem *is not* one of *lack of skill* but *failure to instill willingness to fire.*

Combat training courses for Infantry are not new. I am certain that during the Korean conflict the Army had such courses. I know the Marines had them. The objections to the conventional courses are the belief that excessive safety concerns result in a loss of realism which detracts from training in requisite combat skills and risk developing in the trainee a fearful attitude regarding his weapon. As a former rifle coach, I feel that conventional training methods do no such thing. No one will turn men loose on the new Trainfire ranges and tell them to load up and shoot whenever they happen to see a target.

Advocates of the new methods claim that confidence is lost on conventional ranges because the men are taught positions which cause strain and discomfort. But almost any activity of this nature—throwing a handgrenade or crawling on your stomach—causes body discomfort. To say that shooting should be more comfortable and natural than these activities is nonsense. This type of activity demands something extra of a man's body. Expert riflemen over a long period have determined that the conventional positions give a shooter his best chance to hit his target. The positions were not dreamed up by a sadist to annoy people.

We realize that, in combat, men are not always going to assume a perfect firing position but they will use a position almost like a perfect one if they have been taught a good position to begin with. And if experience is any criterion, the men in combat will hit their target more frequently when using the conventional positions.

My objection against Trainfire is not the course but the *need* for the course. I feel that getting men to fire at sudden or fleeting targets is not the answer to our problem. What is required is that we train men to take control of others and *make them fire.*

Another of my objections against Trainfire is the cost and complexity of operating it. A range of electrically powered, remote-controlled targets will, I believe, cost a lot and will demand an additional group of technicians we now lack badly. If we do use such ranges, they will of necessity be few in number or else so infrequently available that they won't keep our riflemen at a peak of proficiency. That there is a need for such ranges I don't deny but let's be realistic and admit that they will not solve the problem of getting men to fire and that because of their cost and complexity they will be secondary to conventional ranges.

One solution might be to give riflemen an opportunity to fire for record on a Trainfire range at least once a year.

I also was surprised by the number of rounds allotted to training each man in Trainfire. It seems inadequate. According to the *American Rifleman* article, 74 hours and 343 rounds are allotted to training a rifleman in his primary job. Our riflemen need more time and more ammunition.

The average combat Infantryman seldom gets a good shot at anything until he is very close and even then he mainly fires at an area or object rather than some clearly defined enemy. What is essential in combat is that a volume of fire be placed in an area which the enemy holds. By this method we keep him pinned down and we are able to move up and close with him at less expense to ourselves. I do not believe Trainfire will get us this volume of fire. What is

important is for us to determine how to get our men to shoot.

German Field Marshal Rommel recognized this problem. In his book *Infantrie Greift An* he states, ". . . some of the soldiers will often lose their nerve and break for cover. The commander must take vigorous action, using his personal weapons if necessary."

We cannot go on believing that "All our men will do their job" even if we teach them how to do it. Look at the number of men in Korea who suffered from frostbite because so many commanders "knew" that their men would take care of themselves. Commanders soon found out that they had to personally make sure that their men took off their shoes and socks and massaged their feet to prevent frostbite. We had better try the same method in getting men to fire.

Trainfire is an expensive but a good idea. However, I do not believe it is the answer to *why* the fire in recent combat was not effective. It appears to me that the men trained and armed to fire *did not fire.*

I suggest that it might be wise to look to Trainfire for effective training for combat Infantry. As long as we, the Infantry, must capture real estate in combat, our front lines will have to pit Marshall's *Men Against Fire.* The only answer is to get our men to fire . . . and then we can worry about the relative accuracy of it.

Paul E. Wilson, Capt, USMC
U.S.S. Intrepid
En route to Europe

Your thoughts were brought to the attention of the Weapons Department, The Infantry School, and Continental Army Command's Human Research Unit #3 which has been working with Trainfire. Both feel that you have been somewhat misled by two brief and incomplete articles based on early research conducted on this subject. We hope to help remedy this situation in the near future by publishing in the Quarterly *additional material on Trainfire which should answer many, if not all, of your objections. Meanwhile, these comments are offered for your consideration.*

As you so aptly point out, accuracy is not all that is required for effective fire in combat. Willingness to fire is equally vital. Trainfire is based on this concept. From the very beginning the trainee is impressed with the fact that his job is to hit enemy personnel. All of the basic skills taught are those which he can use in combat: *target detection, hitting detected targets while assuming combat positions and firing under time pressure. Of course, the will to fire can only be* started *during a recruit's marksmanship training. It must be progressively developed during the soldier's career. Such factors as morale, fighting spirit, pride in unit and confidence in leaders which are important in developing the will to fire must be ingrained throughout his individual and unit training.*

De-emphasis of the prone position is designed to encourage aggressiveness. Overuse of this position has hurt our combat marksmanship. Prone, the combat soldier can see little. Even on a parade ground a prone man can detect another prone man only as far away as 275 yards. All unsupported positions taught in Trainfire are the same as those taught in the present course except the sling is not used.

Your objection to cost and upkeep of Trainfire I ranges is not borne out by troop tests. The cost of the Trainfire range is approximately half that of the conventional KD range. Savings are even more apparent when you consider the added cost of transition ranges. Improvements made in pop-up targets have reduced cost and time of upkeep. Ranges have been no serious problems at either Fort Jackson or Fort Carson where

troop testing has been conducted during the past year.

The short training time and low ammunition allowances indicated in the articles you read were imposed as minimum requirements during the early research stages of Trainfire I. They were not intended to be ultimate requirements. Currently, Trainfire I requires 78 training hours and 557 rounds. In Trainfire II (squad technique of fire) the rifleman is given greater increases in ammunition.

Trainfire does provide for volume or area fire. The trainee is first taught to fire accurately. He then engages indistinct or invisible targets on the basis of fleeting indications or likely areas. It must be pointed out, however, that the doctrine of wild fire is the concept of the untrained beginner. There is no claim Trainfire creates a new "push button" marksmanship. The present basic fundamentals of shooting are utilized and reemphasized. All instruction integrates well-established learning principles. While there is nothing new in principle within Trainfire I, there is considerable change in emphasis and procedure.

—Editor

Army Extension Courses

Sir:

I am on the I&I staff of the 51st Special Infantry Company here in Flint, Michigan, and will be for the next 30 months. Since I will be away from a division for so long, where the new things are being taught. I have a request to make. Would it be possible for me to take Army Extension Courses?

While reading the January 1956 issue of the *Infantry School Quarterly*, I came across an article on page 42 that interested me. It was about the Army Extension Courses. I am not sure if these are meant for the Army only or for all services. I would like very much to enroll if there is any way possible. I would greatly appreciate it very much if you would do whatever you can for me in this matter.

In closing, I would like to tell you that you have my vote for the best all-around military magazine. As an instructor here on the I&I staff, I have used your magazine in preparing my classes more than any other training aid.

Richard A. Davis, Sgt, USMC
51st Special Inf Co, USMCR
Flint Michigan

Members of any *component of* any service may enroll *in Army Extension Courses. In your case, you must apply for AEC through the Marine Corps Institute, Quantico, Virginia. The Marine Corps Institute then will forward your request to The Infantry School's Department of Non-Resident Instruction for enrollment. Once you begin Army Extension Courses, you will deal directly with the Department of Non-Resident Instruction, The Infantry School.*

—Editor.

Best Buys

Sir:

I have subscribed to *The Infantry School Quarterly* since 1950 as an Infantry officer and, more recently, as an Armored officer. I found early that this magazine is the *best* buy that people concerned with training in any way can find. Every company grade officer of all components certainly should include this magazine as a *must* for his own professional development. National Guard training also can be improved by adapting many of your informative articles to its needs.

Every officer and noncommissioned officer responsible for training troops should join your list of satisfied readers.

William D. Moak, Capt Armor
205th Tank Bn., NYNG
State Armory, Troy, N. Y.

There's nothing like a word of encouragement to add spark to an editorial staff. *—Editor*

WHAT'S NEW FOR INFANTRYMEN

APPROVED

Infantry School To Graduate Special-weapons Officers

Officers who attend regular and associate advanced courses at The Infantry School now receive instruction and training which enable them to serve as qualified special-weapons officers at division and corps level.

The new program, made possible by the adoption of a simplified method of atomic-weapons target analysis, consists of approximately 140 hours of instruction for regular advanced classes and 100 hours for associate advanced classes. Shared by the Staff and Tactical Departments, the instruction includes detailed coverage of the characteristics and capabilities of atomic weapons and delivery means. It includes both means and capabilities currently available and those under development. Army, Air Force and Navy means for atomic support of ground forces are covered as well as the techniques of target analysis. In general, Staff Department instruction is classified, while the applicatory problems presented by the Tactical Department are mostly unclassified. This has been made possible by the provision of unclassified damage and safety radii as well as other data which may be employed in conjunction with standard procedures in applicatory problems. This data is outlined in a new atomic-information handbook published by The Infantry School in August 1956.

The importance of this instruction has been emphasized by CONARC Memorandum 47, 6 September 1956, which sets forth the minimum requirements for special-weapons-trained officers at division and corps headquarters. The memorandum specifies that the minimum special-weapons training required is graduation from one of the following: special-weapons course, Command and General Staff College; special - weapons - employment course at Sandia Base; special-weapons phase of the advanced Artillery officer course in fiscal year 1956 and subsequent classes; regular and associate advanced officer courses of combat branch, technical service or Provost Marshal General's schools in classes beginning after 1 July 1956. (For the associate Infantry officer course the date was changed to after 6 September 1956.)

OER Form Modified

After a two-year study of its officer-efficiency-report system, the Army implemented a modification of the Officer Efficiency Report form on 31 December 1956.

By changing certain sections of the form, the Army hopes to obtain a more adequate evaluation of officers. Principal changes include: a statement about the officer's physical ability to perform the duties of his grade and branch; an indication of the level at which the rated officer can be expected to perform; and an indication of the most pronounced attributes of the rated officer.

The report will now be reviewed by the echelon which rates the indorsing officer to insure that proper rater-indorser channels have been followed. In addition, this procedure will assure that re-

ports of an unusual, adverse or controversial nature are thoroughly examined before being sent to Department of the Army.

The over-all efficiency index (OEI) base is being extended from five to seven years. The current base is from 1951 to 1956 and the seven-year yardstick goes into effect at the end of the 1957 fiscal year. This has been done to lessen the impact of extreme reports and to predict an officer's true efficiency—as reflected by the most current seven-year base—more clearly.

Another important feature of the new OER form is that it spells out in more detail some of the information needed by career branches and selection boards for officer ratings.

The Dart

DEVELOPED

General Purpose Machinegun

The Army's newest squad and platoon automatic weapon is the T-161E3, general purpose machinegun, which has been designed (under present plans) to replace, in the ground role, three crew-served machineguns now organic to Infantry small units. The new weapon, weighing only 23 pounds, or half as much as the M1919A4 and M1919A6, and far less than the M1917A1 water-cooled machinegun, uses the 7.62mm NATO cartridge. Fed by a disintegrating metallic-link belt, the gas-operated weapon has a rate of fire of 600 rounds per minute. It can be fired from the shoulder, hip or from the ground with a folding bipod or a new aluminum tripod.

Antitank Rocket

A simple but effective guided missile, the Dart (XSSM-A-23), has been developed for use against tanks. Department of the Army is now negotiating a $16,500,000 contract for its production. The Dart is powered by a rocket motor using a smokeless propellant. According to its designers the shaped charge in the five-foot missile probably would destroy a heavily armored tank with a single hit. During demonstration the Dart has scored a bull's-eye on a moving target at what was described as "extreme range." The new weapon is intended for use by Infantry and Armor units.

Lightweight Radar

A new radar device, designed for use by two-man observation teams, has been tested and approved for use by Army ground forces to replace the heavier and more fragile field radar equipment now in use.

Without a conventional radarscope, or screen, the new radar employs an "eye" that spots the enemy and relays the information by sound into headphones worn by one member of the team. Much lighter because the radarscope has been eliminated, the new device is composed of two units: a 25-pound drum-shaped metal case housing the detector, and a motor-generator pack, light enough to be car-

ried by one man. It can distinguish between fixed and moving targets at varying ranges up to three miles.

The equipment was developed and produced by Sperry Gyroscope Co. in collaboration with the Army Signal Corps Engineering Laboratory, Fort Monmouth, N. J., and the Army Electronics Proving Grounds, Fort Huachuca, Arizona.

Some of the new sets will be parachuted with other special gear of the reactivated 101st Airborne Division during tests scheduled to continue through March. Other sets have been made available to the Marines for evaluation and testing.

One-shot Flame Thrower

A one-shot, lightweight flame thrower, designed for use in close-combat situations, is in the final stages of development by the Army Chemical Corps. The unit weighs 26½ pounds combat loaded, about one-third the weight of the present multishot model. It was designed for use against bunkers and other emplaced positions where high explosives are ineffective. The weapon can be set with a remote control device for defensive flank emplacement or used as a booby trap.

Because of its compact size, the flame thrower could be jumped with a paratrooper as part of his combat gear.

Waterproof and comfortable to carry, the unit has a two-gallon capacity compared to 4½ in the larger model. Thickened or unthickened fuel can be fired from almost any position.

Gas Detectors

A new automatic nerve-gas detector-alarm has been developed by the Army Chemical Corps and the RCA Laboratories at Camden, N. J. The detector for the colorless, odorless gases weighs about 25 pounds and is contained in a metal carrying case about the size of a portable typewriter. It will run continuously for 12 hours on a 110-volt AC or 24-volt power source. When the alarm detects very small traces of nerve gas a red warning light goes on and a loud buzzer sounds. It will work under dust or heavy smoke conditions.

The Army Chemical Center has developed chemical crayons that make lethal poison gases flash their own warnings in color. Various supersensitive crayons can reveal hydrogen cyanide, lewisite and cyanogen chloride gases in sufficient time for taking rapid preventive measures. The detector crayon for phosgene will expose as little as eight parts of gas in a billion parts of air — far below the danger point — by turning a vivid red within a minute.

Twin-engine Helicopter

The Army's newest chopper, the H-37A, can carry 36 fully equipped soldiers, or 24 litter patients, or equipment as big as a 105mm howitzer. Its five-bladed rotor is powered by two 18-cylinder radial engines mounted in nacelles at the tips of the aircraft's short high wings. Clamshell doors in the nose permit easy loading or unloading. Besides an electric hoist which can raise 2000 pounds the H-37A carries a sling which can lift five tons.

Jeep-mounted Mine Detector

A jeep-mounted detector which automatically stops the vehicle when it locates a land mine has been developed by the Corps of Engineers Research and Development Laboratories, Fort Belvoir, Virginia.

Capable of finding all types of metallic mines buried at normal depths in and along roadways, the detector covers a path six feet wide directly in front of the jeep and can be moved to either side of the vehicle with ease. Operating controls, located on the dashboard of the

jeep, can be manipulated by the driver or his assistant.

The search coil, protected by an immersionproof, rubber-coated plywood box, is kept at a constant height above the ground by three skid-caster wheels which support its plastic carriage assembly.

When the search coil passes over a mine, the vehicle is stopped instantly by the brake actuator — a spring-loaded, hydraulically operated piston which disengages the clutch and sets the brakes.

A meter on the indicator panel shows the presence of the mine. A system of lights, also located on the panel, changes from green to red and the driver receives an audible signal through earphones.

The detector and its carriage assembly weigh about 700 pounds. When not in operation, the apparatus is transported in carrying racks on the rear and on one side of the jeep.

REVISED

Changes In Class Schedules

The following changes in class scheduling have been necessitated by reallocation of quotas and needs of field units:

Basic Infantry officer class 4A was added to the original schedule of classes. It reported 29 October and graduates 23 March 1957.

Infantry counterfire supervision classes 1, 3 and 4 have been canceled.

Infantry advanced NCO course: Reporting dates of 4 February 57 and 6 May 57 for classes 3 and 4 have been changed to 3 February and 5 May. Opening and closing dates remain unchanged.

FIELD MANUALS

CONARC has approved the instructor's guide for Trainfire I as a Department of the Army pamphlet. Trainfire I is being recommended as a replacement for the basic-marksmanship course of the Army. Phase I, Active Army Pilot Course Implementation, is planned for fiscal year 1957; Phase II, Active Army World-Wide Implementation, for fiscal year 1958; and Phase III, Reserve Component Implementation, for fiscal year 1959.

The following field manuals have been approved by CONARC and forwarded to the Government Printing Office:

Change 3 to FM 23-35, 60mm Mortar, M-19. This is a fairly extensive change which includes the current fire commands, military signs and symbols, and the correction of technical errors.

FM 57-35, Army Transport Aviation —Combat Operations. This new manual provides interim guidance for commanders, staff officers and other interested personnel for planning and executing tactical operations employing Army transport aircraft (fixed-wing and helicopter) in support of ground units.

TM 57-210, Air Movement of Troops and Equipment. This is a complete revision of the old manual. The scope has been increased to include new techniques and the characteristics, capabilities and limitations of new aircraft.

TRAINING FILMS AND FILM STRIPS

The following training films and film strips are available to instructors through Army film and equipment exchanges in CONUS and overseas commands. They are not listed in the last change to DA Pamphlet 108-1 (Change 3, May 1956). All films and strips are black and white except TF 45-8575 which is in color.

Training Films

TF 7-1431, The Intelligence and Reconnaissance Platoon, Tactical Employment, 40 minutes.

TF 7-2204, Barrel Packing, .30-caliber Machinegun M1917A1, 6 minutes.

TF 7-2205, Cooling System, Browning Machinegun .30-caliber M1917A1, 5 minutes.

TF 7-2223, Technique of Machinegun Fire—Part I—characteristics of fire, classes of fire, target designation, 37 minutes.

TF 7-2224, Technique of Machinegun Fire—Part II—fire distribution, fire control, fire commands, 38 minutes.

TF 7-2225, Technique of Machinegun Fire—Part III—direct laying, 41 minutes.

TF 7-2226, Technique of Machinegun Fire—Part IV—preparation of range cards, 28 minutes.

TF 7-2227, Technique of Machinegun Fire—Part V—expedients for predetermined fire, 21 minutes.

TF 7-2228, Technique of Machinegun Fire—Part VI—overhead fire, 19 minutes.

TF 7-2229, Technique of Machinegun Fire—Part VII—position defilade, 40 minutes.

TF 7-2230, Technique of Machinegun Fire—Part VIII—Field zeroing the light machinegun M1919A6 on bipod mount, 6 minutes.

TF 7-2231, Technique of Machinegun Fire—Part IX—measuring angles, .30-caliber light machinegun M1919A6 on M2 mount, 8 minutes.

TF 7-2232, Technique of Machinegun Fire—Part X—zeroing the light machinegun M1919A6 on M2 tripod, 5 minutes.

TF 7-2233, Technique of Machinegun Fire — Part XI — auxiliary aiming point, 6 minutes.

TF 7-2239, 81mm Mortar (M-29), Mechanical Training and Crew Drill, 14 minutes.

TF 31-2126, The Airborne Soldier, 33 minutes.

TF 31-2127, Assembly Problem after Fifth Novice Jump, 10 minutes.

TF 31-2128, Personnel Parachute Malfunctions and Activation of Reserve Parachute, 9 minutes.

TF 31-2129, Personnel Parachute Entanglements and Recovery From Twists, 6 minutes.

TF 31-2130, Parachute Landing Falls, 12 minutes.

TF 31-2131, Parachute Training on the 34-Foot Mock Tower, 12 minutes.

TF 31-2132, Conduct of a Parachutist in the Aircraft, 9 minutes.

TF 31-2133, The Swing-Landing Trainer, 7 minutes.

TF 21-2301, Military Instruction — Part I — principles of learning, 23 minutes.

TF 21-2302, Military Instruction — Part II — the stages of instruction — preparation, 12 minutes.

TF 21-2303, Military Instruction — Part II — the stages of instruction — presentation, 12 minutes.

TF 21-2304, Military Instruction — Part II — the stages of instruction — application, examination, and review or critique, 20 minutes.

TF 21-2305, Military Instruction — Part III — training aids, 23 minutes.

TF 21-2306, Military Instruction — Part IV — speech techniques, 11 minutes.

TF 45-8575, Field Training for ROTC, 48 minutes.

Film Strips

FS 7-164, 57mm Rifle, M-18A1—Part I—mechanical training, 64 frames.

FS 7-167, 57mm Rifle, M-18A1—Part II—functioning, stoppages, immediate action, and restoration of balance, 57 frames.

FS 7-168, 57mm Rifle, M-18A1—Part III—ammunition, mounts, fire-control instruments, subcaliber device and boresighting, 46 frames.

FS 7-169, 57mm Rifle, M-18A1—Part IV—marksmanship and technique of fire, 62 frames.

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RAID FROM THE SKY — OCT 1953
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HEIGHT OF BATTLE — JAN 1955
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Lessons learned from the training, preparation and execution of an airborne strike that preceded the invasion of France.

BLUEPRINT - AIR WITHDRAWAL — APR 1955
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PARATROOPS OR HELITROOPS — JAN 1956
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WINGS FOR INFANTRY — JUL 1956
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WHY GOVERNORS? — JUL 1955
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A brief history of the Army's wheeled vehicles.

WHY THE M-SERIES? — JUL 1956
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How our M-Series wheeled vehicles outperform our WW II vehicles.

CHARIOT FOR THE QUEEN — OCT 1956
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THE MULE RETURNS — OCT 1956
By Lt Bernard F. Agnelli
A new midget vehicle—the mechanical mule—designed to take the load off the Infantryman's back and give units greater mobility.

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LONGER RANGE FOR INFANTRY RADIOS JUL 1956
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RANGER-TYPE TRAINING FOR INFANTRY UNITS APR 1956
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SURVIVAL AND THE SOLDIER JAN 1956
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HELP FOR THE S2 JAN 1955
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MORE ON PATROL SUPPORT — JUL 1954
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SOVIET TACTICS — OCT 1955
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HOW TO SURVIVE AN ATOMIC BLAST — OCT 1955
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FIRE POWER AND SPEED WILL BEAT THE ODDS — APR 1956
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A PATTERN OF ACTION — JUL 1956
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ATOMIC FIRE SUPPORT — OCT 1956
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SMALL UNIT TASK FORCES — OCT 1956
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FROM BALL TO BOATTAIL JUL 1955
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POWDERS AND PRIMERS APR 1956
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Familiarity with the bayonet breeds confidence.

BAYONET OCT 1954
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FLAME IN A PACKAGE JAN 1956
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SNAKEPOTS TO BASEBALLS APR 1956
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Brings us up to date on the new grenades, pyrotechnics, safety regulations and training notes which have been developed since 1949.

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FIRE BLANKS WITH THE LIGHT MACHINEGUN OCT 1953
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A blank-firing device for the light machinegun.

FIRE POWER PLUS OCT 1953
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History of the machinegun.

ACCURACY WITH THE LMG OCT 1956
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How to improve LMG firing by proper zeroing.

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FORGOTTEN KILLERS JUL 1953
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The clearing of unrecorded minefields.

WHO ARE WE FOOLING? JUL 1955
By Maj F. M. Watson and Lt B. R. Bridges
The importance of marking minefields. Marking devices that can be improvised in the field.

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THE NEW 81MM MORTAR JAN 1953
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The new 81mm mortar M29, and how it

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THEY CALLED IT INGENUITY JAN 1953
By Lt M. J. Killingsworth
The construction and employment of an inexpensive training aid which can be used to teach laying of the mortar when there is a limited supply of weapons.

A SERGEANT REPORTS APR 1953
By SFC Acreman
A new method of employing the M10 plotting board, permitting firing of the 4.2-inch mortar directly from map data.

GET THE MOST FROM YOUR MORTARS JUL 1953
By Capt Lyman H. Clark
Recommends use of the 60mm mortar in support of a company in the attack rather than in direct support of, or attached to, an assault rifle platoon.

SUNDAY PUNCH JAN 1954
By Cpl Norman S. Poser
The development of the mortar and its wartime use.

A PANORAMIC SIGHT FOR THE 81MM MORTAR JAN 1955
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Advantages of the M34 mortar sight.

SIGHTING MADE SIMPLE APR 1955
By Lt John R. Goodwin
The construction and use of a training aid for teaching men to obtain an accurate sight picture with the 81mm and the 4.2-inch mortars.

THE HEAVY MORTAR:
PARADE OF PROGRESS OCT 1955
By Capt K. D. Mertel
New developments in heavy mortars including ammunition, firing procedures, forward observation and a gunnery officer's course.

TWO-MAN PUNCH APR 1956
By Capt L. H. Bulawsky
The mission of the 60mm mortar should be changed to that of a true light mortar. Two men can replace the five-man crew.

Recoilless Weapons

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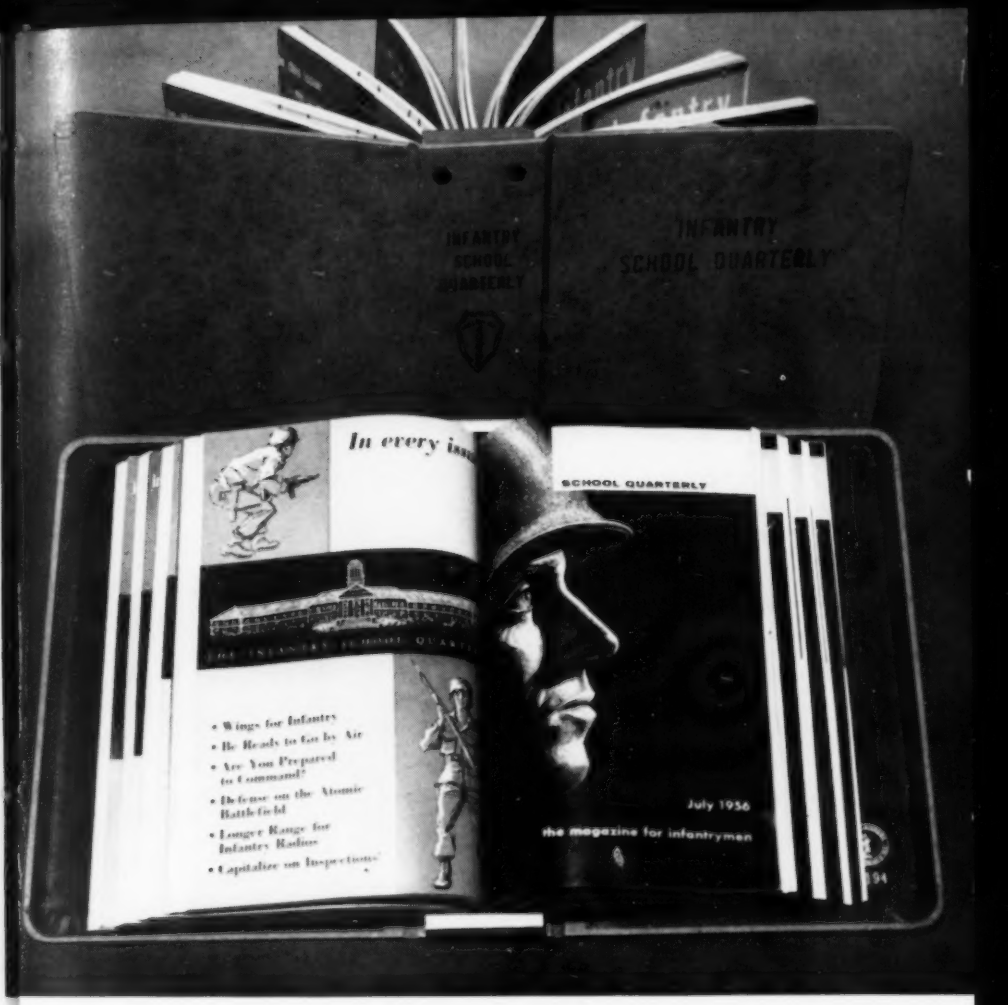
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